

USQD Screening Required

It has been determined that prior to issuing a new revision to this procedure, a USQD Screening is required.
It is the responsibility of the person revising the procedure to insure that this review is performed.

**INTEGRATED SAFETY
MANAGEMENT SYSTEM
DESCRIPTION**

April 2003

**INTEGRATED SAFETY
MANAGEMENT SYSTEM
DESCRIPTION**

Date Issued—April 2003

**Prepared for the
U.S. Department of Energy
Office of Environmental Management**

**BECHTEL JACOBS COMPANY LLC
managing the
Environmental Management Activities at the
East Tennessee Technology Park
Y-12 National Security Complex Oak Ridge National Laboratory
Paducah Gaseous Diffusion Plant Portsmouth Gaseous Diffusion Plant
under contract DE-AC05-98OR22700
for the
U.S. DEPARTMENT OF ENERGY**

BECHTEL JACOBS COMPANY LLC

Bechtel Jacobs Company LLC is committed to Environment, Safety and Health excellence through the implementation of Integrated Safety Management.

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President and General Manager

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ACRONYMS

AA	Authorization Agreement
AHA	Activity Hazard Assessment
ALARA	As Low As Reasonably Achievable
ASA	Auditable Safety Analysis
BIO	Basis for Interim Operations
BJC	Bechtel Jacobs Company LLC
BPS	Bechtel Procurement System
CARB	Corrective Action Review Board
CCR	Competence Commensurate with Responsibility
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COR	Contracting Officer's Representative
CPEB	Closure Project Evaluation Board
DEAR	Department of Energy Acquisition Regulation
DOE	Department of Energy
DSA	Documented Safety Analysis
EC&P	Environmental Compliance and Protection
ES&H	Environment, Safety, and Health
ETTP	East Tennessee Technology Park
I/CATS	Issues/Corrective Actions Tracking System
IRB	Issues Review Board
ISM	Integrated Safety Management
ISMS	Integrated Safety Management System
MOP	Manager of Projects
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NTS	Noncompliance Tracking System
OBS	Organizational Breakdown Structure
ORNL	Oak Ridge National Laboratory
ORPS	Occurrence Reporting and Processing System
OSHA	Occupational Safety and Health Act

PAAA	Price-Anderson Amendments Act
PBI	Performance Based Incentive
PMOC	Performance Measures, Objectives, and Criteria
PQA	Performance/Quality Assurance
QA	Quality Assurance
RFP	Request for Proposal
RPP	Radiation Protection Program
RWMB	Radioactive Waste Management Basis
SA	Safety Advocate
SEP	System Engineer Program
SFT	Subcontract Formation Team
SMA	Subject Matter Area
SME	Subject Matter Expert
SMP	Safety Management Program
SPDRT	Subcontract Proforma Document Report and Tracking
S/RID	Standards/Requirements Identification Document
SSI	Safety Systems Integration
STR	Subcontract Technical Representative
TSR	Technical Safety Requirement
USEC	United States Enrichment Corporation
USQ	Unreviewed Safety Question
WBS	Work Breakdown Structure
WSS	Work Smart Standards
Y-12	Y-12 National Security Complex

SCOPE

Bechtel Jacobs Company LLC (BJC) performs Environmental Management work in accordance with the terms and conditions of the prime contract with the U.S. Department of Energy (DOE). This work scope includes activities at the East Tennessee Technology Park, the Oak Ridge National Laboratory (ORNL), the Y-12 National Security Complex (Y-12), the Paducah Gaseous Diffusion Plant, the Portsmouth Gaseous Diffusion Plant, and at various off-site locations in the Oak Ridge area. BJC is responsible for ensuring compliance with all applicable laws, regulations, and other requirements as defined in the contract. BJC will also ensure compliance with safety basis documents and other regulatory agreements.

As described herein, the Integrated Safety Management System (ISMS) is applicable to all work performed under the contract whether the work is self-performed or subcontracted. This ISMS Description document describes how we ensure that our employees, including subcontractors, perform work safely. The BJC ISMS is not applicable to work performed by other DOE prime contractors, by the United States Enrichment Corporation (USEC), reindustrialization lessees, or other site tenants. BJC will communicate with other site residents, as appropriate, to ensure coordination of safe work activities.

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INTRODUCTION

This Integrated Safety Management System (ISMS) Description reflects the Bechtel Jacobs Company LLC's (BJC) approach for integrating safety into all aspects of work planning and execution. This document serves as a road map to the ISMS implementing mechanisms. The term safety is used synonymously with environment, safety and health throughout ISMS implementation policies, to encompass protection of the public, the workers, and the environment, including pollution prevention and waste minimization.

Systems and processes are developed under the BJC ISMS to ensure that:

- risks and vulnerabilities are identified, prioritized, appropriately incorporated into the budget planning process, and reflected in the Lifecycle Baseline;
- work processes and management systems used to accomplish work are adequately integrated and appropriately include affected parties (i.e., workers, subject matter experts, etc.) in the planning process;
- standards, requirements, and expectations are identified and incorporated in controlling documents, including work directives, agreements, and subcontracts and are properly interpreted, integrated, and consistently applied. Standards and requirements are maintained current;
- the expectation of line management responsibility for safety is clearly established, understood and accepted;
- all workers, subject matter experts, managers, subcontractors, and service providers are fully aware of their roles, responsibilities, and authorities for ISMS and are held accountable through formal mechanisms;
- ISMS issues and site-wide activities and initiatives are effectively identified, coordinated, and integrated;
- workers are meaningfully involved in ISMS processes, including the work control and feedback processes, to better ensure that all hazards specific to the work activity, job site, facility safety, and public health are identified and appropriate controls are implemented;
- work is coordinated, as appropriate, with other contractors to preclude adverse impacts;
- lessons learned from previous activities are appropriately included in the planning for future similar work;
- clear roles and responsibilities for all employees are established, communicated, understood and accepted;
- training and qualifications are maintained to ensure personnel are competent to perform assigned responsibilities; and
- processes are in place to measure ISMS effectiveness, provide feedback for improvement, to develop ISMS Performance Measures, Objectives, and Criteria (PMOC), and to maintain the ISM System Description document.

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1. COMMITMENT

OUR SAFETY CULTURE

*The foundation upon which our safety culture is built is our commitment to **DO WORK SAFELY**. This is an absolute belief – our core value – that the safety and health of every worker and the public at large, and our environment, are the most important assets we are entrusted to protect. This belief is consistent with the Bechtel Jacobs Company mission: to clean up the site environment. A strong safety culture is a prerequisite and key to the effective integration of safety into all phases of work planning and execution. Our core value of safety is fundamental to every work activity throughout the project and is the basis for the continued growth of our safety culture.*



***President and General Manager
Bechtel Jacobs Company LLC***

POLICY

Bechtel Jacobs Company LLC (BJC) is committed to an Integrated Safety Management System (ISMS) that promotes the company's core values. We will do work safely. ISMS and our safety culture provide environmental protection, worker safety, public health protection, feedback and improvement, pollution prevention, waste minimization, and quality assurance (QA) programs. These programs are tailored to specific projects and activities. The objective of ISMS is to systematically integrate environment, safety and health (ES&H), pollution prevention, waste minimization and QA into management and work practices at all levels so that workers, the public, and the environment are protected while our missions are accomplished while obtaining feedback for continuous improvement.

Management Commitment and Leadership

Safety leadership starts at the top level of the BJC organization. Our president and our deputy general managers are accountable for protecting the environment, safety, and health of every worker in the organization, including those employed by our subcontractors. Their ownership of this responsibility sets the standard for all of the other members of our management team.

A fundamental commitment to put safety first flows down from the president to each employee, including subcontractors. With this emphasis, BJC will achieve excellence in the following ES&H areas:

Safety and Health

BJC protects the safety and health of workers and the public by identifying, analyzing, and mitigating hazards and implementing sound work practices. We do not compromise safety for the sake of other project objectives, such as cost and schedule. All of our employees and subcontractors are held responsible for complying with requirements during all work activities.

Environmental Protection

BJC conserves and protects environmental resources by incorporating environmental protection and the elements of an enabling environmental management system into the daily conduct of business; fostering a spirit of cooperation with federal, state, and local regulatory agencies; and using appropriate waste management, treatment, storage, and disposal methods. The environmental performance goals we strive to meet are to achieve zero unpermitted discharges to the environment; to comply with all conditions of environmental permits; to integrate environmental management considerations when implementing ISMS; and, to the extent practicable, to reduce waste generation, prevent pollution, and maximize recycle and reuse potential.

Facility Safety Programs

BJC uses facility safety programs to analyze and control hazards and to develop the appropriate safety basis documents for nuclear and non-nuclear facilities. These programs include nuclear safety, criticality safety, fire protection, and emergency management, and are integrated to assure protection for on-site workers, co-located workers, the public and the environment. The level of protection is based on formal identification of the hazards and a thorough analysis of the potential accidents and risks presented by these facilities. The analyses and protective measures are documented in approved safety basis documents.

Zero Accident Performance

BJC is committed to Zero Accident Performance, which is reflected in company policies, programs, plans and procedures (see Fig. 1.1). All employees are empowered to make “safety first” a reality at their work sites during planning and execution of work.

Pollution Prevention/Waste Minimization

BJC demonstrates its commitment to environmental and health protection and continuous improvement through pollution prevention and waste minimization. The program assesses planning and work activities to identify alternatives that prevent/reduce waste generation, reduce hazardous material usage, and increase resource conservation (including use of products with recycled material content).

Safety Management System Integration With Quality Assurance

Effective implementation of QA requirements supports the principles and functions of ISMS. The BJC fundamental quality expectation is that all work meets established requirements. In this regard, the QA program ensures compliance with approved standards and requirements, so that the expectation for safe work within controls is met, and that workers, the environment, and the public are protected from harm. The BJC management systems assure that quality and safety requirements are properly integrated to achieve their objectives. Shared attributes of the QA program and the ISMS are identified in the ISMS/QA Criteria Crosswalk, Fig. 1.2, along with unique attributes for each.

Feedback and Improvement

BJC uses data from internal and external reviews, audits, and assessments to provide extensive information measuring adequacy and effectiveness of ISMS implementation with roll-up for senior management. These tools and the Six Sigma process are used to continuously improve BJC processes and to maintain a vigorous ISMS process.

Zero Accident Performance

Philosophy

Bechtel Jacobs Company is dedicated to the concept that all accidents are preventable. Accordingly, the company is committed to achieving and sustaining “Zero Accident Performance” through continuous improvement practices.

Objectives

- Strive to eliminate all injuries, illnesses, and adverse impacts to the environment.
- Promote environment, safety, and health objectives as a constant value in designing, planning, training, and executing work.
- Spread ownership for environment, safety, and health program effectiveness throughout the Team.
- Enhance employee awareness and involvement in our environment, safety, and health program implementation.
- Increase employees’ consistent use of safe practices in their daily work activities.
- Optimize the use of continuous improvement practices as the basis for “Zero Accident Performance” initiatives.
- Demonstrate to our customer that Bechtel Jacobs Company is “Dedicated to Safety Excellence.”
- Select and mentor subcontractors that are committed to “Zero Accident Performance.”

Ownership

- Senior management demonstrates leadership and direction for “Zero Accident Performance” implementation.
- All Bechtel Jacobs Company employees and subcontractors are empowered to implement and consistently strive for the “Zero Accident Performance” goal.
- Bechtel Jacobs Company Functional Managers develop policy, provide technical direction, and coordinate supporting services in partnership with the customer to help achieve safety excellence.



Dedicated to Safety Excellence

Fig. 1.1 We are committed to achieving Zero Accident Performance.

QUALITY AND SAFETY SHARE ATTRIBUTES	
▪ Integrated Approach	▪ Management Systems
▪ Expectation for Implementation	▪ Line Management Responsibility
▪ Clear Roles and Responsibilities	▪ Competence Commensurate with Responsibilities (Training and Qualification)
▪ Balanced Priorities (resources)	▪ Standards Management
▪ Feedback and Improvement	▪ Graded and Tailored Controls
▪ Documented and DOE Approved	▪ Apply to BJC and Subcontractors
UNIQUE ATTRIBUTES	
<u>SAFETY</u>	
▪ Work Performed Safely	▪ Operations Authorization
▪ Hazard Identification	▪ Readiness Confirmation
▪ Hazard Analysis	▪ Safety Basis
<u>QUALITY</u>	
▪ Price-Anderson Compliance	▪ Item Control and Maintenance
▪ Work Meets All Requirements	▪ Calibration, Test, and Inspection
▪ Product/Service Quality	▪ Design Control
▪ Continuing Training	▪ Procurement/Supplier Quality
▪ Preventive/Corrective Action	▪ Management/Independent Assessment
▪ Documents and Records	

Fig. 1.2 ISMS/QA Criteria Crosswalk.

2. INTEGRATED SAFETY MANAGEMENT SYSTEM OVERVIEW

The DOE *Safety Management System Policy*, DOE P 450.4, identifies the following six primary components of ISMS:

- Objective,
- Principles,
- Functions,
- Mechanisms
- Responsibilities, and
- Implementation.

The first three components are described in detail in the DOE policy and apply universally across the DOE complex. The last three, mechanisms, responsibilities, and implementation, are unique to each DOE prime contractor and are tailored by each prime contractor according to the contractor's mission and organizational structure. This system description is the high level description of the BJC ISM System that specifically discusses mechanisms, responsibilities and implementation.

Objective

The objective of ISMS, simply stated, is to provide a safe workplace and to perform work safely while protecting the worker, the public, and the environment. BJC-GM-1400, *Integrated Safety Management System Description*, defines implementation of ISMS by BJC.

In accordance with charter BJC-GM-112, *Environment, Safety and Health*, work will be performed only when the risk of sustaining injury or illness is as low as reasonably achievable. It is the right and responsibility of BJC employees and subcontractors to actively participate in the planning of activities, as appropriate, to ensure their knowledge and experience improves work performance and to cause activities to be stopped when unsafe conditions or practices are observed in their own work or that of others. This concept is an intrinsic part of BJC's programs and procedures.

BJC, through its people, programs, and procedures, seeks to meet its mission and customer expectations while ensuring adequate protection of the worker, the public, and the environment; however, mission and customer expectations must yield if adequate safety cannot be achieved.

It is the intent of the BJC QA Program to be fully consistent with and supportive of the company's ISMS Program. BJC/OR-43, *Bechtel Jacobs Company LLC Quality Assurance Program Plan for Environmental Management and Enrichment Facilities at Oak Ridge, TN, Portsmouth, Ohio, and Paducah, Kentucky*, details the methodologies employed to do work processes safely and in accordance with established procedures. It also describes the mechanism in place to seek continuous improvements by identifying and correcting deficiencies and preventing their recurrence.

Guiding Principles

The following outlines the seven guiding principles for the ISMS as established by DOE P 450.4. BJC has also established guiding principle number eight (worker involvement), which is imperative to BJC ISMS implementation strategy success. The BJC core mechanism for implementation is identified for each principle.

NOTE: Requirements and performance expectations for Subcontractors are identified through BJC Proforma as described in Section 4, Management of Subcontractors. Specific Proforma are identified in Appendix A, “ISMS Guidelines Matrix.”

1. *Line Management Responsibility.* Line Management is responsible for the safe and efficient conduct of work to ensure protection of the public, the workers, and the environment. This document, BJC-GM-1400, and Policy 401, *Managers of Projects*, clearly define that Line Management is responsible and accountable for safety of all activities performed within their facilities or organizations. This concept is further enforced in lower-tier program procedures.
2. *Clear Roles and Responsibilities.* Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels. Procedure BJC-HR-0710, *Training Position Descriptions*, defines the process used to identify key roles and responsibilities and associated training requirements for BJC personnel. Policies, programs, and procedures identify specific roles and responsibilities for the safe execution of work.
3. *Competence Commensurate with Responsibilities.* Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. Procedures BJC-HR-0202, *Employment Process*, BJC-HR-0702, *Training Program*, BJC-HR-0710, *Training Position Descriptions*, and BJC-HR-0724, *Training and Qualification Program for BJC Category 2 and 3 Nuclear Facilities*, define the process for training and qualifying BJC personnel. Procedure BJC-FS-1001, *Work Control Requirements*, requires the assignment of qualified personnel to perform activities.
4. *Balanced Priorities.* Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the workers, the public, and the environment is a priority whenever activities are planned and performed. Procedure, BJC-PC-1004, *Baseline Management and Change Control*, defines the budgetary process and controls for assuring that protecting the public, the workers, and the environment is a priority when planning and addressing changes to the scope, schedule or budget for authorized work. The prioritization process is documented in the Oak Ridge Performance Management Plan and PC-C-1004-B-003, *Prioritizing and Sequencing EM Projects*.
5. *Identification of Safety Standards and Requirements.* BJC implements this guiding principle through the use of procedure BJC-PQ-1150, *Standards Management*. This procedure describes the process for selection and maintenance of standards and requirements identification and revision using input and feedback from subject matter experts, workers and line management in BJC, its subcontractors, and DOE. Federal, state, local laws and regulations, as well as consensus standards are a part of the set of standards and requirements. Procedure, BJC-PQ-1420, *Management Assessment*, and BJC-PQ-1401, *Independent Assessment*, describe the process for evaluating implementation of standards and requirements. The process for ensuring flowdown of standards and requirements is governed by BJC-PQ-1150, *Standards Management*, BJC-PQ-1107, *Performance Documents Process*, and PR-1002, *Processing Proforma Documents*.
6. *Hazard Controls Tailored to Work Being Performed.* Engineering and administrative controls to prevent and mitigate hazards are integrated and tailored to the work and associated hazards. Procedure BJC-PQ-1150, *Standards Management*, describes the process used at the company level to tailor hazard controls to the scope of work. Hazard categorization is performed in accordance with DOE-STD-1027-92. The Documented Safety Analysis (DSA) defines the requirements that need to be implemented to maintain the safety envelope of a facility. At the facility level, hazards are analyzed according to potential risks and vulnerabilities from credible

accident scenarios in the facility in accordance with procedures BJC-NS-1002, *Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities* or BJC-NS-1009, *Safety Documentation for Radiological and Non-Nuclear Facilities*. Procedure BJC-EH-2010, *Hazard Assessment*, assures that hazard controls are tailored to the work being performed at the activity level. Procedure BJC-FS-1001, *Work Control Requirements*, establishes the fundamental work control requirements.

7. *Operations Authorization*. The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed-upon. The processes for readiness reviews are described in BJC-PQ-1520, *Readiness Reviews for Radiological, Non-Nuclear and Other Industrial Facilities/Activities* and BJC-PQ-1510, *Readiness Review for Nuclear Category 2 & 3 Facilities/Activities*. Contractual mobilizations are governed by procedure PR-3404, *Subcontract/Purchase Order Administration*, PR-3303, *Construction Subcontracts/Davis Bacon Act*, and BJC-FS-1012, *Subcontract Technical Representative (STR) Requirements for Subcontract Execution*. Authorization to perform work in a facility is governed by directive, BJC-GM-515, *Facility Management*.
8. *Worker Involvement*. Worker involvement is necessary in each of the five safety management functions. Procedures and proforma documents require BJC and subcontractor worker involvement, when appropriate, in job planning, hazard identification, pre- and post-job briefings, assessments, safety meetings, incident investigations, and procedure development walkdowns.

Functions

The focus of the BJC ISMS is to systematically integrate ES&H controls into management and work practices. In managing the contract, BJC implements five safety management functions:

1. define the scope of work,
2. analyze hazards,
3. develop and implement hazard controls,
4. perform work within controls, and
5. provide feedback and continuous improvement.

Four Levels of ISMS Implementation

BJC approaches the way work is performed in four levels (see Fig. 2.1). Those levels define development of work scope, identification of hazards, and implementation of controls. Each level is defined as follows:

1. The *program* or *corporate* level establishes controls for the company.
2. The *project* level defines controls based on the scope of the project.
3. The *task* or *subcontract* level addresses controls at a level needed to assign work.
4. The *activity* or *worker* level ensures that controls are in place at the point where work is performed.

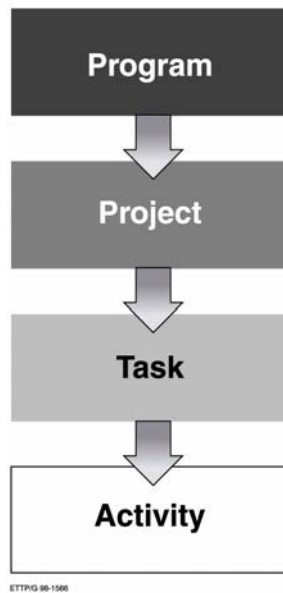
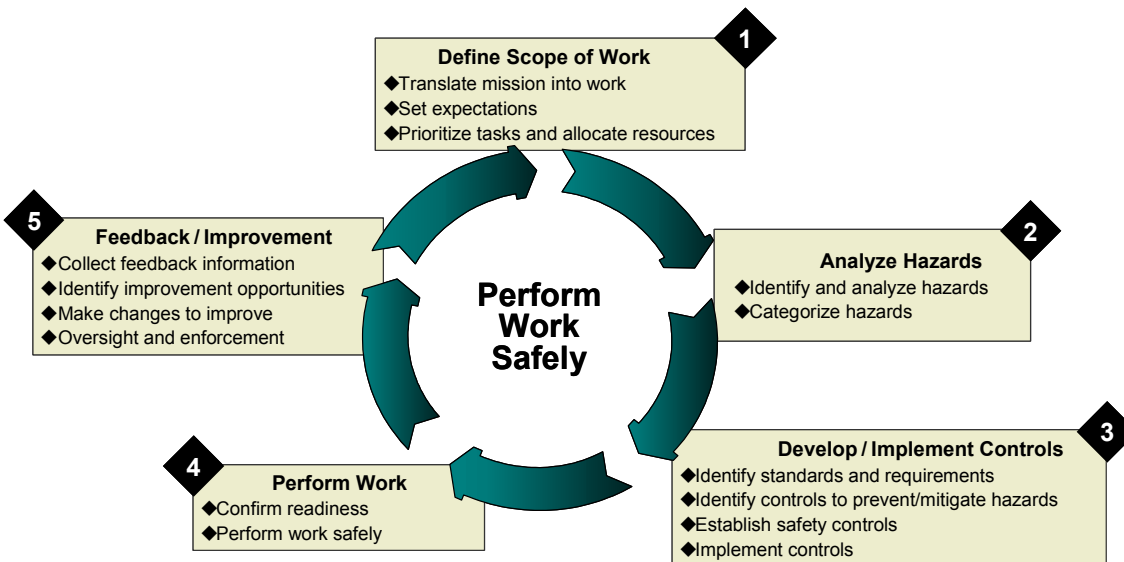


Fig. 2.1 We use four levels of ISMS.

The implementation of ISMS at each of these four levels also incorporates facility controls, as appropriate, to provide for safe execution of work within BJC facilities. The following section addresses each of the five safety management functions and describes our method for applying them in our work. The guiding principles are evident throughout the text. Figure 2.2 graphically illustrates the BJC approach to addressing the five core functions of ISMS, and the seven guiding principles plus worker involvement.



The Seven Guiding Principles

1. Line management responsible for safety
2. Clear roles and responsibility
3. Competence commensurate with responsibilities
4. Balanced priorities
5. Identification of safety standards and requirements
6. Hazard control tailored to work
7. Operations authorization

Fig. 2.2 We use the five core functions and the seven guiding principles plus worker involvement to perform work safely.

I. DEFINE THE SCOPE OF WORK

The first step in the BJC ISMS process is defining the work scope, including translating the contract scope of work into a specific program baseline document, setting expectations, and prioritizing tasks and allocating resources.

NOTE: Requirements and performance expectations for Subcontractors are identified through BJC Proforma as described in Section 4, Management of Subcontractors. Specific Proforma are identified in Appendix A, “ISMS Guidelines Matrix.”

Translate the Contract Scope into Work

The Prime Contract is based on a focused DOE business strategy to accelerate cleanup and maximize cost effectiveness through use of competitive subcontracting. Life cycle and annual baseline plans define the scope of work to be performed consistent with budgetary, regulatory, risk prioritization, and other considerations. Budgets for each scope of work in the work breakdown structure include the necessary safety resources required to execute the work within a safe envelope. Contract milestones and baselines are developed and agreed to by BJC and DOE, with input from regulators and stakeholders. This process is governed by BJC/OR-162, *Life Cycle Baseline Update Guidance Document*.

After the program baseline is developed, the project teams plan, schedule, and execute the work. Managers of Projects and their teams divide the work into projects and tasks, and make decisions regarding self-performance or subcontracting. Task scopes of work are defined to ensure that task interactions will not result in conditions that violate the safety envelope. Project teams establish priorities, allocate resources, and schedule the work to be completed based on the agreed-upon program baseline.

Work scopes are entered into the specific project’s work control system and managed in accordance with governing BJC or subcontractor procedures. The appropriate project organization is responsible for translating the scope of work into field activities.

Set Expectations

Performance Based Incentives (PBI) are established by DOE as the mechanism for measuring the accomplishment of specific contract objectives. The PBIs are based upon the approved life-cycle baseline. A performance agreement that defines the scope of work, assumptions, schedule and cost for the performance of the PBI and defines expected outcomes that can be objectively measured is established by DOE for each PBI. Status is reported to DOE monthly and any changes to the PBI are documented and approved. DOE validates completion of the PBIs and notifies BJC of fee earned after the end of each evaluation period.

The expectation that work be performed safely and in compliance with contract requirements is also clearly established. Managers of Projects retain the ultimate responsibility and accountability for achieving the performance objectives. Activities are tied to project goals, and each task is scheduled in support of project objectives. Completing each task in a safe and environmentally sound manner helps ensure that schedules are met. Performance, schedule, ES&H, and quality expectations are communicated through the project organizations to all employees. Pollution prevention and waste minimization expectations and opportunities are discussed in the planning phase of the ISM process.

The ISMS Annual Report provides status of ISMS implementation (based on existing performance expectations), improvements to ISMS, and any changes to ISMS documents or related processes.

Prioritize Tasks and Allocate Resources

BJC uses a risk-based prioritization method for determining the overall lifecycle sequence of work to be performed. Risk-based prioritization assists management in balancing priorities and in allocating resources to risk reduction activities. Risk reduction activities include those to mitigate immediate onsite and offsite risks, reduce further migration of contaminants offsite, address sources of offsite surface water and groundwater contamination, address remaining onsite contamination, and address decontamination and demolition of facilities.

The highest risk priority is imminent human safety and health risks, followed by off site risks to public and environment, then compliance with existing regulatory enforceable agreements, such as milestones in the Federal Facilities Agreements or the Site Treatment Plans. The next priority is actions to mitigate risk under current land use. Following this priority are those activities that are on the critical path for completion of the program. After these top four priorities are met, a series of balancing criteria are considered for prioritizing the remaining work.

As program or project conditions emerge, changes from the original baseline plan may be required due to a variety of reasons. BJC uses a baseline change control process to assure that changes in priorities, scope, cost, and schedule are appropriately reviewed and approved. This process is described in BJC-PC-1004, *Baseline Management and Change Control*.

II. ANALYZE HAZARDS

Analyze Hazards

Standards for mitigation of identified hazards are selected and established as contractual requirements through the implementation of procedure BJC-PQ-1150, *Standards Management*. Standards provide the basis for work control documents used to execute the safe conduct of work activities.

The analysis of hazards addresses potential risks and vulnerabilities from credible accident scenarios at the facility level in the facility safety basis documents in accordance with procedures BJC-NS-1002, *Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities* or BJC-NS-1009, *Safety Documentation for Radiological and Non-Nuclear Facilities*.

For specific scopes and when the tasks for performing the work have been clearly defined, the project team or subcontract formation team identifies the environmental, safety, and health related hazards associated with the performance of project tasks in accordance with procedure BJC-EH-2010, *Hazard Assessment*. Based on the complexity and risk associated with the activity, work processes and environment are reviewed by an integrated multidiscipline team. This team analyzes any hazards to identify the controls necessary to perform the activity safely. This process includes examining facility safety basis, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) risk assessment, and other available site data, interviewing people involved in the work processes, and performing site walkdowns. If existing information does not provide adequate data to identify hazards, sampling and characterization may be performed. After the hazards are identified, the project team documents the hazard assessment.

The subcontractor's process for analyzing hazards is defined in the subcontractor's project specific ES&H plan, which is submitted to BJC prior to mobilization of work. Hazards for each task are identified, analyzed and documented prior to the task being initiated. Worker involvement and review of lessons learned are crucial elements of assuring that hazards have been adequately analyzed. Pre-job briefings are conducted to communicate hazard assessment information.

Categorize Hazards

Major ES&H risks and vulnerabilities are identified, communicated, and appropriately incorporated into budget planning to effectively manage ES&H risks in accordance with BJC-PC-1001, *System Description* for Project Controls. Categorization of nuclear facilities is performed in accordance with the requirements of DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*. Categorization of non-nuclear facilities is performed in accordance with BJC/OR-1112, *Hazard Categorization/Classification and Hazards Analysis Application Guide*. Based on the facility categorization, appropriate safety basis documents are developed, approved, and implemented in accordance with BJC-NS-1002, *Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities*, and BJC-NS-1009, *Safety Documentation for Radiological and Non-Nuclear Facilities*.

III. DEVELOP AND IMPLEMENT HAZARD CONTROLS

After hazards are identified, controls necessary to protect workers, the public, and the environment from harm are identified and implemented. The BJC ISMS subdivides this process into four distinct steps. The first step in controlling hazards is to identify the standards and requirements associated with the work to be performed. These standards and requirements provide the necessary guidance to complete the second step which is to determine options for hazard mitigation. The hazard control options are evaluated, and the third step is to choose the best option for eliminating or mitigating the hazard. The fourth step is to establish and implement selected controls.

Identify Standards and Requirements

BJC complies with the standards and requirements identified in Section J, Appendix E, of the prime contract with DOE. These standards and requirements include Work Smart Standard (WSS) sets for operations, construction and engineering, and Standards/Requirements Identification Documents (S/RID) covering emergency preparedness and occurrence reporting. BJC procedure BJC-PQ-1150, *Standards Management*, describes the process for standards and requirements identification and revision using input and feedback from subject matter experts, workers and line management in BJC, its subcontractors, and DOE. Federal, state, and local laws and regulations, as well as consensus standards are a part of the set of standards and requirements.

Identify Controls to Mitigate or Prevent Hazards

Controls to mitigate hazards are identified through Technical Safety Requirements (TSR), safety bases, permits, regulatory requirements, agreements, procedures, activity hazard assessments, and training. Work planning includes a step-by-step review of how the activity will be performed, which hazards are involved, and which controls are needed to eliminate or mitigate identified hazards. The types of engineered controls, administrative controls, and personal protective equipment used to mitigate or preclude all identified hazards are documented. All aspects of the proposed controls are adequate to protect workers, other site personnel, the public, and the environment from the consequences of normal operations, accidents, or releases to the environment. The preferred order of controlling hazards is engineering (elimination, removal, substitution, etc.), administrative (procedures, plans, directives, etc.), and personal protective equipment (safety harness, respirator, etc.).

Establish Controls

Controls are established for both worker and facility safety and for protecting the public and the environment. Administrative ES&H controls for workers are tailored to the specific project and task. Details are included in procedures, work process documentation, safety basis and TSRs. Engineering controls are put in place where necessary to protect workers, the site and adjacent environment.

At the task level, additional controls may be required based on the identification of controls required through the Activity Hazard Assessment (AHA) process. Activity sequences, prerequisites, and hold points related to ES&H are documented in the activity work plan. Based on the AHA, administrative, engineering or process controls necessary to mitigate each ES&H hazard are implemented. If site conditions change, work is suspended or stopped, hazards are reviewed and, when needed, the existing ES&H controls are discontinued or modified with management concurrence to adapt to changed site conditions. Controls are also established in the facility safety basis or other work-controlling documents to ensure that site personnel, the public, and the environment are protected from unacceptable environmental, safety, and health consequences due to accidents.

At the activity level, work is categorized in accordance with BJC-FS-1001, *Work Control Requirements*. A work control document is developed for the appropriate work category. Information derived from the AHA is used in developing the work control document. Work packages are developed and procedures are prepared.

Personnel qualifications and competencies are derived from the identified scope of work and associated hazards. The resulting requirements are communicated in the BJC training and qualification program specified in procedures BJC-HR-0702, Training Program, BJC-HR-0710, Training Position Descriptions, BJC-HR-0724, Training and Qualification Program for BJC Category 2 & 3 Nuclear Facilities.

Implement Controls

Based on the work to be performed, identified hazards, and method of accomplishment, appropriate tools are utilized to define and implement necessary administrative or engineering controls. These tools include one or more of the following:

- elimination of hazard,
- task work plans,
- activity work packages,
- work permits,
- procedures,
- ES&H plans,
- environmental compliance plans,
- activity hazard assessments,
- inspections and checklists,
- waste management plans,
- transportation plans,
- work instructions,
- safety basis documents including DSAs/TSRs,
- nuclear criticality safety evaluations,
- designs and/or design changes,
- signs and postings, or
- training.

Specific mechanisms and methodologies are used to tailor controls at the appropriate level of work and hazard. These methods provide the means to implement identified controls and ensure that they remain in effect as long as the hazard is present. Plans and procedures include processes, including the change control process, that the project team will use to implement controls at the activity level. Methods for testing and verifying controls and for ensuring that personnel are qualified to discharge their responsibilities are also required. These methods are defined in performance documents which include policies, directives, process/program descriptions, procedures, charters, interface documents, and instructions at the four levels shown in Figure 2.1.

IV. PERFORM WORK

To perform work safely, BJC confirms the readiness of the project team, verifies that the work control documents are in place, monitors and oversees work during execution and ensures that effective systems for managing change are in place. Each of these important steps in the safe performance of work is discussed in the following paragraphs. Pre-mobilization requirements for subcontracted work are described in Section 4.

Confirm Readiness

To verify that the appropriate pre-job activities have been completed effectively for tasks involving significant hazards, BJC uses a readiness review process described in procedures BJC-PQ-1510, *Readiness Reviews for Hazard Category 2 & 3 Nuclear Facilities/Activities*, and BJC-PQ-1520, *Readiness Reviews for Radiological, Non-Nuclear, and Other Industrial Facilities/Activities*. The rigor of this review increases for more hazardous activities. The reviews provide evidence that the following elements are in place.

- Work scope is accurately and specifically defined.
- Hazards have been adequately identified and characterized.
- Appropriate controls for the protection of workers, the public, and the environment have been identified and will be implemented during the execution of work.
- Adequate ES&H procedures, emergency response procedures, environmental documentation (National Environmental Policy Act (NEPA)/National Historic Preservation Act (NHPA)) and applicable environmental permits and plans have been developed and will be implemented during execution of work.
- Adequate levels of trained staff and technical support are in place before the start of work.
- Safety systems are operable and maintained according to design specifications and TSRs.
- Workers are trained and qualified.

Facility managers oversee activities performed in their facility/facilities and ensure those activities are conducted in a safe manner and within the safety basis of the facility in accordance with BJC-GM-515, *Facility Management*.

Typical issues and questions addressed as part of a field readiness evaluation are shown below.

Example Readiness Review Topics

- Have all insurance, bonding, and premobilization submittals been approved?
- Is the task clearly defined?
- Is the activity within the approved safety basis?
- Have all the hazards been identified?
- Are the appropriate work authorizations in place (environmental permits, state approval, work permits, NEPA, CERCLA, etc.)?
- Are the appropriate procedures in place?
- Are the proposed control measures adequate and appropriate?
- Does the work affect other subcontractors, prime contractors, site residents, or reindustrialization lessees? If so, what measures have been taken to coordinate the work and limit the effect?
- Are all project personnel trained and qualified?
- Are the necessary materials and equipment on site?
- Has all equipment been inspected (as required)?

At the activity level, similar topics are addressed through a pre-job briefing before commencing work activities. Also, as appropriate, more formal operational readiness reviews or assessments are conducted in accordance with DOE requirements.

Operations Authorization

The operations authorization for BJC nuclear facilities is established through Authorization Agreements (AA) in accordance with procedure BJC-NS-1015, *Generation, Review, Approval, and Control of Authorization Agreements and Radioactive Waste Management Basis*. Facility Managers authorize work to be performed in their facility in accordance with directive BJC-GM-515, *Facility Management*.

Management of Change

For both nuclear and non-nuclear facilities, BJC and subcontractors follow a structured process to assure that changes to the facility are reviewed against the governing safety basis document and properly authorized. This process evaluates changes in design, proposed activities, work plans and procedures, and is also used to evaluate the discovery of changing conditions that may affect the safety basis. The change evaluation process encompasses the following:

- screening of appropriate proposed changes to determine if a change evaluation is required,
- evaluating proposed changes in design, activities, procedures, and work documentation to verify that a proposed change is within the existing safety basis and BJC is authorized to make the changes, or if DOE authorization is needed,
- performing annual updates of nuclear facility safety basis documents.

The process used for nuclear facilities is described in procedure BJC-NS-1001, *Unreviewed Safety Question Determinations For Nuclear Category 2 & 3 Facilities*. Procedure BJC-NS-1008, *Unreviewed Change Determinations for Radiological and Non-Nuclear Facilities*, describes the process used for Radiological and Chemical Hazard Facilities.

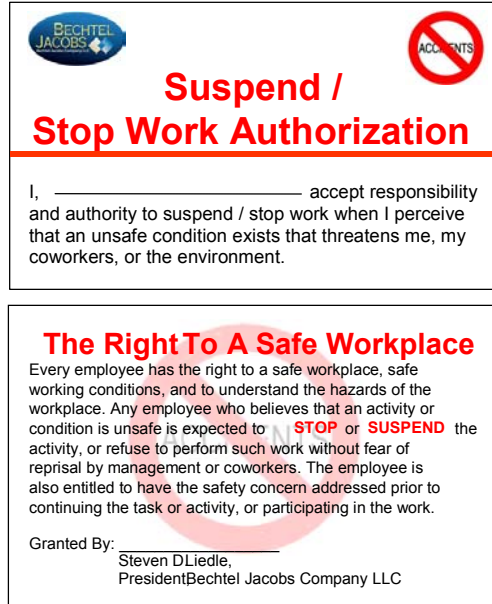
Other controls used for managing change are listed under “Configuration Management” in Section 5 of this document.

Procedure Compliance

In order to assure safety, quality and consistency in our work activities, BJC has established a clear expectation of compliance with procedures (Policy 10, *Discipline and Rigor of Operations*). Procedures are to be implemented as written. If a procedure cannot be followed due to special circumstances, changing conditions, or the procedure is incorrect, work must be stopped and the procedure revised. In this context, the term procedures includes all documents that control work, e.g. safety analyses, plans, procedures, or other instructions for performing work.

Suspend/Stop Work Authority

The authority and expectation to suspend work is extended to all BJC and subcontractor employees. Figure 2.3 is a representation of the Suspend/Stop Work Authorization Card that is provided to all employees as a reminder of both their authority and responsibility. Procedure BJC-EH-2018, *Suspension of Work (Safety Related)*, provides specific guidance on suspension of work authority.



The image shows a 'Suspend / Stop Work Authorization Card'. At the top left is the Bechtel Jacobs logo. At the top right is a red circle with a diagonal line through it and the word 'ACCIDENTS' inside. The title 'Suspend / Stop Work Authorization' is in large red font. Below the title, a line for a signature is followed by the text: 'I, _____ accept responsibility and authority to suspend / stop work when I perceive that an unsafe condition exists that threatens me, my coworkers, or the environment.' The second section is titled 'The Right To A Safe Workplace' in red. The text below states: 'Every employee has the right to a safe workplace, safe working conditions, and to understand the hazards of the workplace. Any employee who believes that an activity or condition is unsafe is expected to STOP or SUSPEND the activity, or refuse to perform such work without fear of reprisal by management or coworkers. The employee is also entitled to have the safety concern addressed prior to continuing the task or activity, or participating in the work.' At the bottom, it says 'Granted By: _____' followed by 'Steven DLiedle, President Bechtel Jacobs Company LLC'.

Fig. 2.3 Suspend/Stop Work Authorization Card.

Without fear of reprisal, employees are encouraged to approach all work with a high degree of inquisitiveness and to satisfy themselves that it is safe to proceed. All employees are empowered to refuse to perform work that is unsafe, even if directed to do so by supervisors, customers, or other prime contractors on shared sites. Work that is suspected or proven to place workers, the public, or the environment at risk shall be stopped until it can be demonstrated that changes are made and it is safe to proceed with the work.

There are two levels of suspend/stop work authority. An informal suspension of work is used when the condition can be corrected within a reasonable time. After the corrective action(s) has been taken, the supervisor or Subcontract Technical Representative (STR) must evaluate the adequacy of the corrective action(s) and if satisfactory, may authorize the resumption of work.

If the condition cannot be corrected within a reasonable time, a formal stop work order is initiated. Work that is stopped for safety or environmental reasons, such as changing conditions, emerging hazards, or failure to implement specified hazard controls, can be resumed only on the authority of the project ES&H supervisor (or higher), and the project manager (or higher), and only after corrective or compensatory actions have been instituted.

V. FEEDBACK AND CONTINUOUS IMPROVEMENT

BJC utilizes a variety of feedback and assessment methods to evaluate the adequacy and effectiveness of the ISMS processes and to assure continuous improvement in ISMS implementation. Data is collected at the program (company) level, project, task (subcontract), and activity levels through formal and informal mechanisms. BJC management systems include assessments, subcontract submittals and reporting protocols. These management systems provide ongoing evaluation of both BJC and subcontractor performance to assure conformance to specified requirements and effective implementation. Examples of these systems include STR review of subcontractor submittals and deliverables; Safety Advocate (SA) assessments of subcontractor Environment, Safety and Health performance; subcontractor scorecards; Subject Matter Expert (SME) assessments, and Quality Engineer monitoring of project performance. Management assessments and independent assessments are conducted to provide ongoing, formal

feedback. Issues identified from internal and external assessments are documented, causal analyses are performed, and corrective actions developed and tracked to closure. Analyses are conducted on a regular basis to identify trends for management action. Data from these processes are evaluated by senior management to identify opportunities for continuous improvement relative to the adequacy of the ISMS and its implementation, including the effectiveness of feedback and improvement activities. This information is used to identify and correct systemic issues. BJC utilizes the Six Sigma process to effect improvements in targeted areas, including those associated with ISMS.

Assessments

Self-assessments are performed by the organization having primary responsibility for the work, process, or system being assessed. Organizations within the company plan and schedule self-assessments. Self-assessments encompass both formal assessments and informal assessments. The more formal self-assessments include management assessments (BJC-PQ-1420, *Management Assessment*), subcontractor oversight, and performance monitoring (BJC-PQ-1415, *Performance Monitoring*). Informal self-assessments include SA and STR weekly inspections and routine walkthroughs conducted by STRs, SAs, Quality Engineers, and line managers.

Management, including Managers of Projects and functional managers, are responsible for planning and performing management assessments. Each functional and project organization is responsible for conducting management assessments in their areas of responsibility that focus on areas that present the greatest consequences of failure and the greatest benefit from improvement. Results from internal and external evaluation, reviews, occurrences, and lessons learned are considered when planning management assessments.

The management assessment process is used to evaluate the adequacy and effectiveness of management control systems. While retaining overall responsibility for the assessment process, senior management requires management at all levels to assess the performance of the activities assigned to their organization. Periodically, senior management reviews and evaluates data from external and internal sources, including knowledge based on their own experience, to identify problems that hinder the organization's ability to achieve its mission performance objectives.

Organizations and individuals outside the direct control and responsibility of the organization being assessed perform independent assessments. Independent assessments are conducted by P/QA, CPEB and SMEs. Functional managers employ organizational processes for their assessments of functional program implementation. The overall BJC assessment process is described in BJC-GM-1001, *Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process*.

Issues Management

BJC issues are identified through external assessments, internal assessments, nonconformance reports, PAAA noncompliance determinations, occurrence reports and trend analysis. Investigations of accidents, incidents, environmental releases or noncompliances, near misses, radiological events and property damage may also result in programmatic issues being identified. Once identified, issues are reviewed by the BJC Issues Review Board (IRB) and tracked in the BJC Issues/Corrective Action Tracking System (I/CATS). The IRB ensures the issue is assigned to an issue owner who is responsible for performing a causal analysis and developing corrective actions. When the issue is significant, root cause is determined in accordance with BJC-PQ-1230, *Root Cause Analysis*. The Corrective Action Review Board (CARB) reviews corrective actions for selected issues. The CARB also determines whether an end point assessment will be conducted to assure that significant or programmatic issues have been adequately addressed.

Key information is captured for each issue in the database including significance, Subject Matter Area, and ISMS principles and functions. This information is used in trending and reporting to BJC

management. Additional sources of data used for management feedback include the Lessons Learned database, the DOE Occurrence Reporting and Processing System (ORPS), and the PAAA Noncompliance Tracking System (NTS) database. Corrective actions required from Lessons Learned are captured and reported through I/CATS. ORPS and NTS data are periodically summarized in separate reports presented to BJC management.

The BJC issues management process is defined in procedure BJC-PQ-1210, *Issues Management Program*.

Lessons Learned

Lessons learned programs from the DOE complex, and other government or commercial operations are central to a proactive approach to prevention of issues and continuous improvement opportunities. Lessons learned are identified and communicated, as appropriate, to all affected employees and organizations. The lessons learned program, as described in procedure BJC-PQ-1240, *Lessons Learned Program*, is an integral part of the BJC ISMS.

Trend Analysis

The CPEB establishes trending protocols that provide guidance and instruction for performing routine trend generation and analysis of data from I/CATS and other sources. Trending translates assessment results into information to improve safe, efficient, effective work activities. Trend analyses are used to evaluate issues and provide feedback for continuous improvements. The CPEB performs analyses of data, identifies trends for management action, and provides periodic reports to responsible project, functional, and senior management.

Six Sigma

In BJC, the proven Six Sigma methodologies have been combined with Performance Based Leadership to transform the way we do business; tackle the issues that can negatively impact performance and drive us toward our goal of meeting business objectives and customer expectations. Six Sigma is a problem-solving methodology that uses a systematic approach to allow an organization to improve quality quickly and effectively. It utilizes a rigorous set of tools and methodologies designed with one purpose in mind - to produce a dramatic improvement in work quality, profitability, customer and employee satisfaction and leadership of business enterprises. By identifying, measuring, and eliminating defects/errors, Six Sigma leads to:

- Improved customer satisfaction (by exceeding quality expectations)
- Improved delivery of goods and services (reduced defects)
- Reduced cycle times
- Reduced cost of performance
- Increased pride and satisfaction on the BJC team

To deal with costly errors and defects, Six Sigma focuses on process, specifically the activities that make up a process, rather than the final outcome, because the activities that occur during the process dictate the final outcome. The approach focuses on identifying and eliminating the Cost of Poor Quality embedded in current business and operational process through the use of qualitative and advanced quantitative tools and techniques.

BJC is continually working to improve processes for feedback and improvement to provide management with leading indicators of poor performance. This information is used to maintain and improve ISMS processes in an ongoing basis.

Other Feedback Mechanisms

In accordance with procedure BJC-EH-2015, *Safety Concerns (I Care/We Care)*, complaints, concerns, or incidents receive immediate attention. Feedback from these sources is reviewed immediately by functional and project management and project personnel. Corrective actions, up to and including suspending or stopping work, are taken as appropriate.

Post-job briefings at the activity level provide useful information for improving work planning and execution. At the task level, project subcontractor score cards and performance metrics are used as feedback sources. Projects employ performance measures and other metrics to provide feedback for improvements. BJC program level feedback includes the Zero Accident Council, Performance Based Incentives, and ISMS Performance Expectations (as negotiated and agreed upon with DOE).

The Closure Project Evaluation Board/ISMS Improvements organization (BJC-GM-213, *Closure Project Evaluation Board/ISMS Improvements*) is responsible for developing trending protocols, reviewing trend data, and providing periodic feedback to responsible project, functional, and senior management. The CPEB evaluates feedback data to determine the effectiveness of safety management programs and overall ISMS implementation and integration, and issues an annual evaluation report.

3. ORGANIZATION ROLES AND RESPONSIBILITIES

THE MANAGEMENT TEAM

The organization defines roles and responsibilities to ensure effectiveness of communication during work planning and execution. The BJC president is responsible for managing the company and guiding the management team toward the safe performance of all work. As the senior manager for the BJC, he has ultimate responsibility for safe accomplishment of work and leads in setting the company standards and expectations for all work under this contract. The vice president, deputy general manager, MOPs, and functional managers work as a team to achieve project integration and safe performance of work. The management team ensures compliance with requirements, allocates resources, integrates project execution and support functions, and focuses on project completion.

MANAGERS OF PROJECTS

Project execution is led by a Manager of Projects responsible and accountable for the execution of the work scope. Managers of Projects are senior line managers who are fully empowered to control project resources and have cradle-to-grave responsibility for project planning and execution. They have direct and immediate responsibility for the safe performance of project activities under their direction, including field implementation of ISMS. The President holds each Manager of Projects personally accountable for the safe performance of work under his or her purview.

Managers of Projects assign project managers to lead project teams in the successful execution of an assigned scope of work. Project managers also direct the activities of personnel and project subcontractors (through STRs) in the implementation of safety programs and requirements. The project managers' success in implementing ISMS depends on effective use of the company's functional resources.

SUPPORT AREA MANAGERS

The BJC Support Area Managers are senior level managers who lead multi-functional organizations. They provide direct oversight and support to senior management, program and project support groups and project teams throughout the company to facilitate effective integration of functional programs and processes.

FUNCTIONAL MANAGEMENT

The BJC functional managers provide policy, procedures, and programs within their areas of responsibility and provide support to the project teams by "matrixing" their professional resources to the projects. Functional managers are responsible for designated subject matter areas, and are supported in each area by subject matter experts. Functional managers are responsible for the development, oversight and maintenance of program implementing mechanisms to ensure complete and accurate flowdown of contract standards.

BJC functional managers provide support at the programmatic level and perform programmatic oversight functions. The deployed project support resources integrate the actions of the project teams from their discipline perspective, ensuring that work is conducted in accordance with established procedures and guidelines. They also share lessons learned among the teams to improve safety and work/cost efficiencies.

PROJECT MANAGEMENT

The project teams are composed of personnel matrixed to the project from the functional organizations. Although the makeup of project teams varies depending on the work scope, the basic project team consists of a project manager, procurement supervisor, STR, facility manager, cost/schedule supervisor, quality representative, nuclear safety manager, EC&P lead, waste management technical support engineer, transportation specialist and an ES&H representative/Safety Advocate. Other functional resources and personnel with task or discipline-specific experience are included on the team as needed.

Project teams are responsible for the planning and successful execution of the work. They develop project-specific execution plans, procedures, and subcontracting requirements necessary to perform both project activities and oversight to confirm that activities comply with the specified requirements.

Project teams provide the mechanism for integrating environmental, safety, and health considerations and controls into project activities. The project teams are responsible for defining the work scope, including prioritization of tasks and resource allocation within the project. They also ensure that the hazards associated with the project are appropriately identified, analyzed, and controlled and that readiness is confirmed prior to the start of work. Project teams identify opportunities to establish engineering and/or administrative controls to ensure zero unpermitted discharges and to minimize waste generation. Changes from the initial plan are reviewed by the project team prior to implementation.

FACILITY MANAGERS

Each BJC facility has an assigned Facility Manager who has been formally qualified and authorized by BJC Management to oversee all activities performed in his/her assigned facility/facilities and ensure they are conducted in a safe manner within the safety basis of the facility. The Facility Managers are provided to the MOPs from the Field Services functional organization and are responsible to the MOP for authorizing and overseeing the safe execution of all work activities in their facility(ies) in accordance with BJC-GM-515, *Facility Management*.

SAFETY SYSTEMS INTEGRATION ORGANIZATION

The BJC Safety Systems Integration (SSI) organization provides direct support to program and project teams throughout the company to facilitate integration of environmental, safety, and health activities. The SSI organization includes groups responsible for radiation protection, industrial hygiene, occupational safety, environmental protection, quality assurance, nuclear facility safety, fire protection and emergency management.

CLOSURE PROJECT EVALUATION BOARD/ISMS IMPROVEMENTS

The CPEB has a key role in the integrated assessment and oversight process, and is one of the primary vehicles used by BJC in assessment of overall sustained continuous improvement. The CPEB may also be delegated special assignments by the Manager of the SSI organization (e.g. management and integration of ISMS reverification activities). The Manager of the SSI organization appoints members of the CPEB and designates the chairman who reports to the Manager of SSI.

As stated in BJC-GM-213, *Closure Project Evaluation Board/ISMS Improvements*, the CPEB is responsible for developing, implementing, and maintaining continuous improvements in the following areas:

- Maintaining the BJC ISMS Description.

- Developing an integrated assessment process and schedule coordinated with appropriate organizations including the DOE.
- Planning and conducting closure project evaluations utilizing performance-based criteria with reports to senior management.
- Developing trending protocols, reviewing trend data and providing feedback to responsible project, functional, and senior management.
- Screening assessment findings, observations, proficiencies and resulting corrective actions for effectiveness and to establish company wide priorities.
- Evaluating feedback data to determine effectiveness of safety management programs and of overall ISMS implementation and integration, and issuing an annual evaluation report.
- Identifying opportunities for improvement.
- Developing annual PMOCs.
- Planning and integrating ISMS improvements.

THE EMPOWERED WORKER

Each employee, as an empowered worker, holds the key to the success of ISMS: ***the effective application of safe work processes***. Whether employed by BJC or a subcontractor, each employee's abilities and commitment to execute activities in a safe and environmentally sound manner form the basis for our safety culture. BJC is committed to all employees being trained and qualified commensurate with their duties and responsibilities. As illustrated in Fig. 3.1, employees are personally involved in the ISMS process through the following:

- being adequately trained and qualified,
- identifying workplace hazards,
- participating in work control document and procedure development,
- following procedures,
- providing feedback, including lessons learned, and
- participating in incident investigations and self assessments.

Supervisors and line managers clearly communicate expectations during briefings that address job-specific hazards and the means to mitigate them. User-involved procedures, work permits, and task-specific activity hazard assessments are developed through encouraging full participation by the individuals with the best knowledge and experience of actual job-site conditions. All workers are empowered to put **SAFETY FIRST**.

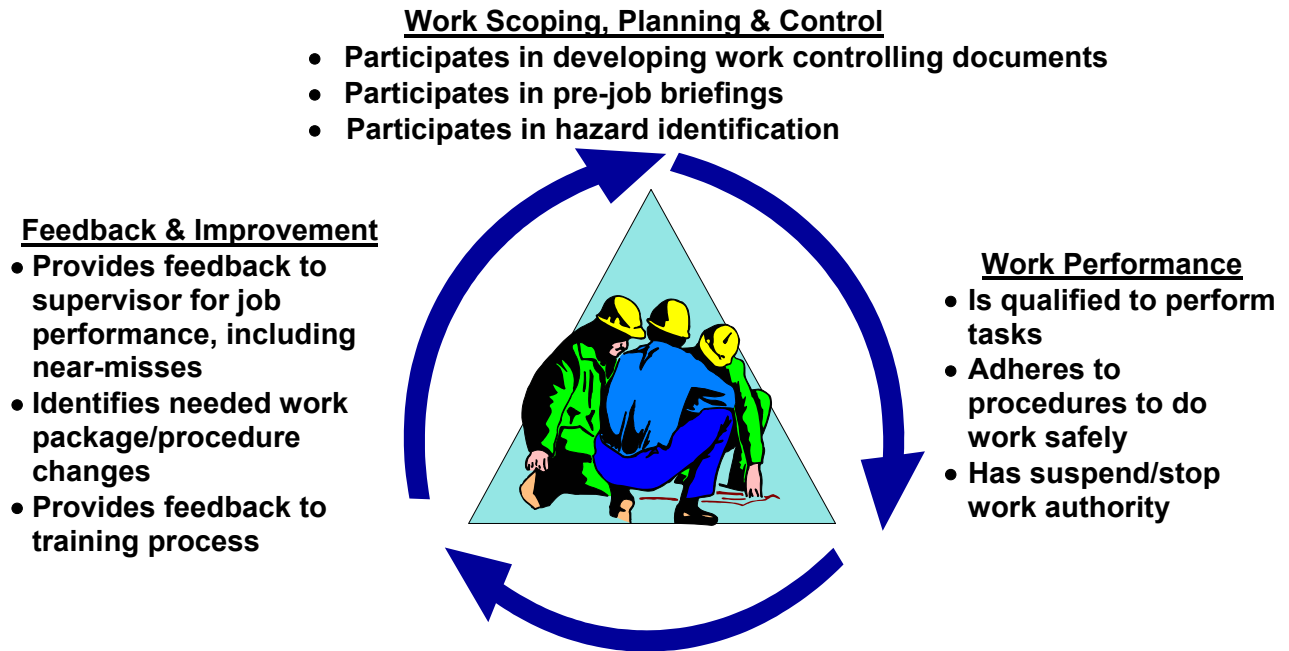


Fig. 3.1 Our workers are actively involved in the integration of safety into the work.

4. MANAGEMENT OF SUBCONTRACTORS

Under its contract, BJC manages the performance of a significant portion of its scope through competitively awarded performance based subcontracts. These subcontractors function within the BJC ISMS structure, while performing work in accordance with specific subcontract scope, requirements, and terms. The BJC process for management of subcontracted work includes proforma management (standard terms and conditions); subcontract formation and selection; and subcontract administration.

Subcontractor Selection Process

BJC selects subcontractors to perform work within the scope of the subcontract according to a defined process under the authority of the BJC Procurement group, as represented graphically in Fig. 4.1 Subcontractors must first meet the BJC ES&H prequalification criteria as posted on the external procurement web-site before receiving a Request for Proposal. The subcontractors' previous ES&H compliance performance and a willingness to be mentored to attain excellence are factored into the selection process in accordance with BJC-PR-1403, *Receipt and Evaluation of Proposals*.

Subcontractor Administration

Subcontract Formation Team

The subcontract formation team (SFT) is selected in accordance with BJC-PR-1401, *Appointment of Formation Teams*. The SFT is a multidisciplinary team with subject matter experts selected based on the particular scope of work in development. If possible, the STR and Safety Advocate are assigned before the formation team assembles.

Procurement Representative

Procurement Representatives are BJC personnel assigned to a project manager or a functional subcontract from the Procurement organization. They are responsible for all commercial aspects of the subcontract. The procurement representative provides contractual approval to perform the work and assures performance to subcontract terms and conditions. They are responsible for the definition and administration of the subcontractor's scope of work under the subcontract and they provide subcontract interpretation. Their roles and responsibilities are identified in procedure PR-3404, *Subcontract/Purchase Order Administration*.

Subcontract Technical Representatives (STRs)

STRs are BJC personnel assigned to a project manager or functional manager from Field Services or another functional organization. STRs are responsible for oversight and daily subcontract activities and ensuring subcontract requirements are met. STRs are trained in subcontract language, subcontract administration, and ES&H requirements to ensure that the subcontractor(s) work within the guidelines of the BJC contract and ISMS. STRs are selected by the appropriate project/functional managers and appointed by the procurement manager and STR manager. As line managers, STRs are responsible for oversight and ES&H management of their assigned subcontractor(s). Their roles and responsibilities are identified in procedures BJC-FS-1010, *Subcontractor Technical Representative (STR) Program Plan*, BJC-FS-1011, *Subcontract Technical Representative (STR) Requirements for Subcontract Formation*, BJC-FS-1012, *Subcontract Technical Representative (STR) Requirements for Subcontract Execution*, and BJC-FS-1013, *STR Requirements for Subcontract Closeout*.

Safety Advocate

Safety advocates are BJC ES&H representatives familiar with the specific requirements of the subcontractor's scope of work and with the workplace hazards that will be encountered on the job. They report through the SSI organization but are matrixed to a project or function. Safety advocates are responsible for coaching and mentoring subcontractors to attain safety, health, and environmental excellence through the appropriate level of safety controls. A safety advocate is paired with an STR to provide assistance in performing his or her responsibilities. A key responsibility of the safety advocate is to provide assurance that the subcontractor meets the BJC expectations in the area of ES&H. The safety advocate's roles and responsibilities are identified in procedure EH-5614, *Safety Advocate Program*.

Approach for Standards and Requirements Flowdown

The Subcontract Formation Team develops a preliminary ES&H compliance matrix for inclusion in each request for proposal that clearly specifies the ES&H performance requirements for the subcontract. The team also works with Procurement to develop specific subcontract language applicable to the work scope. BJC-PR-1407, *Formation, Processing and Control of RFPs* describes this process. Requirements flowdown is through Proforma as listed:

- Exhibit A – General Conditions
- Exhibit B – Special Conditions
- Exhibit C – Quantities, Prices, Data
- Exhibit D – Scope of Work
- Exhibit E – Technical Specifications
- Exhibit F – Drawing List and Drawings
- Exhibit G – Environment, Safety and Health
- Exhibit H – Workforce Transition Requirements
- Exhibit I – Subcontractor Submittal Requirements Summary
- Exhibit J – Wage Determination
- Exhibit L – Mandatory Contractor Procedures

All subcontractors are required to complete an ISMS compliance matrix (Appendix G-1). This matrix documents how the subcontractor implements ISMS requirements. Subcontractors are also required to complete a standards and requirements compliance matrix (Appendix G-3, ES&H Crosswalk). This matrix documents hazards, standards and controls applicable to specific hazards.

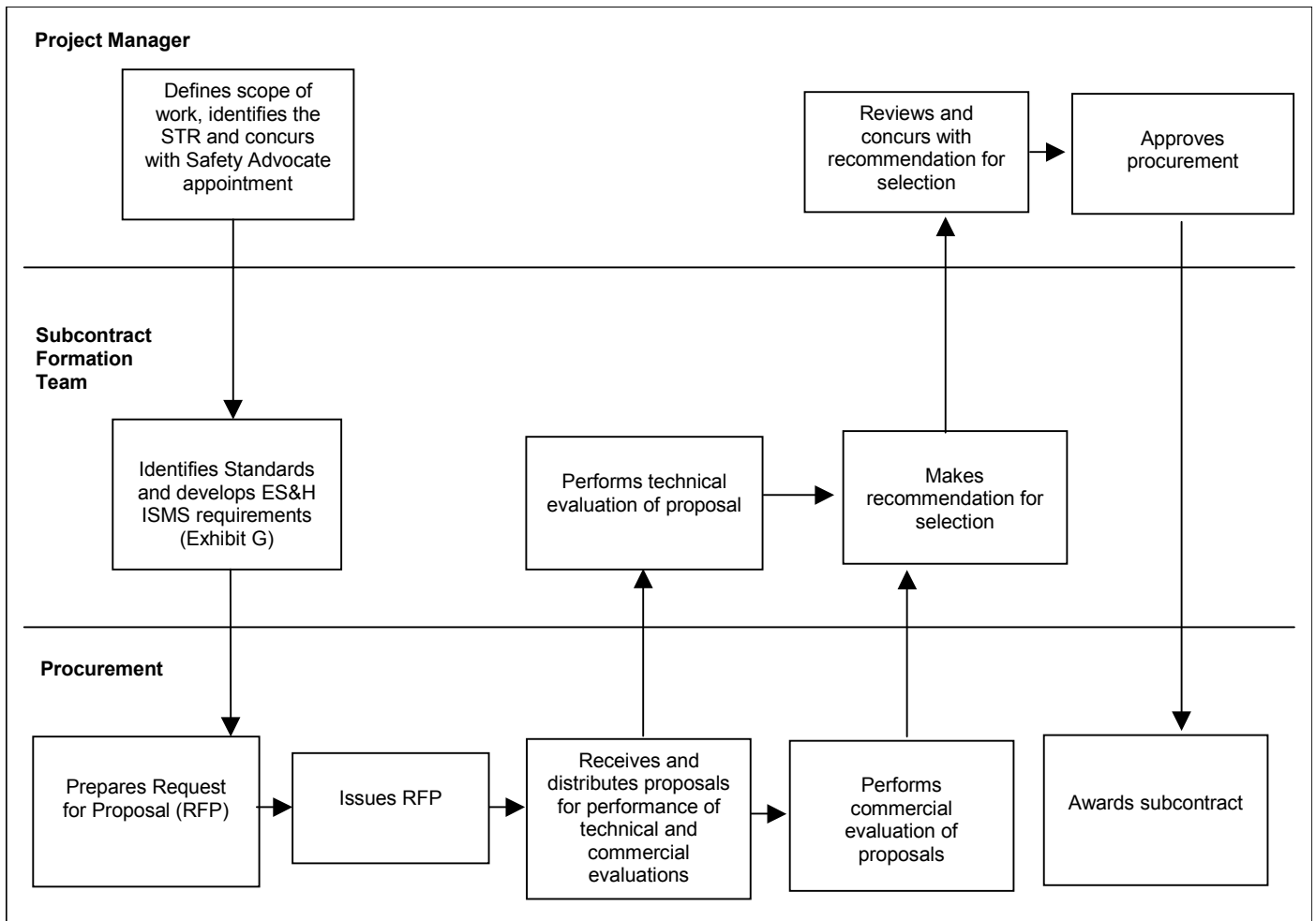


Fig. 4.1 Under ISMS, the subcontract formation team has a primary role in the subcontractor selection process.

Subcontractor Selection Process

After the subcontract formation team is selected, the scope of work is defined and divided into discrete tasks to allow for hazard identification. Each unit of work is carefully defined in the standard subcontract language (Exhibit D).

Deliverables and performance expectations, including ES&H expectations, are identified in the subcontract and task/work releases (see Fig. 4.2). The subcontractors are responsible for contractually flowing these expectations to their lower-tier subcontractors.

When the tasks for performing the work have been clearly defined, the subcontract formation team identifies the environment, safety, and health-related hazards associated with the subcontract scope of work in accordance with procedure BJC-EH-2010, *Hazard Assessment*. After the hazards are identified, the project team documents the hazard assessment.

The subcontract formation team uses information gathered during preparation of the hazard assessment to develop specific subcontract language and a tailored standards compliance matrix (ES&H Crosswalk) for the subcontract package. The subcontract language requires the submittal of an ES&H plan and identification of applicable subcontract ES&H requirements based on the complexity and risk associated with the work.

Subcontractor Mobilization

The successful bidder is required to submit a detailed description of the subcontractor's plans for conducting the work. These plans include methods for performing the work in accordance with the applicable BJC prime contract ES&H requirements that are flowed down through the standards and requirements compliance matrix. Subcontractors are required to complete the standards and requirements compliance matrix to match their ES&H program to the requirements of the subcontract scope of work. An activity hazard assessment (AHA) is also submitted that identifies types of hazards that are known or could be present under the scope of work, including hazards the subcontractor may create. The AHA includes details on how the subcontractor plans to mitigate or preclude the hazards identified. (Exhibit G and Exhibit I).

Subcontractors address in their AHA documents the types of engineering controls, administrative controls, and personal protective equipment to be used to mitigate or preclude identified hazards. Subcontractors ensure that all aspects of the proposed controls are adequate to protect workers, other site personnel, the public, and the environment from the consequences of normal operations, accidents, or releases to the environment (Exhibit G).

Activity sequences, prerequisites, and hold points related to ES&H must be documented in the work plan. Based on hazards identified the subcontractor defines the appropriate engineering and administrative controls, and personal protective equipment that will be implemented into the AHA. If site conditions change, work is suspended or stopped, hazards are reviewed and if needed, the existing ES&H controls are discontinued or modified to adapt to changed site and hazardous conditions. Controls are also established in the facility safety basis or other work-controlling documents to ensure that site personnel, the public, and the environment are protected from unacceptable consequences due to accidents. All aspects of the proposed controls must be adequate to protect workers, other site personnel, the public, and the environment from the consequences of normal operations, accidents, or releases to the environment.

Exhibit E of the subcontract (Technical Specifications) establishes work control requirements for the subcontractor when the work involves physical, manual, or field-related support activities. Before the initial performance of work that involves physical, manual, or field-related work activities, the subcontractor is required to submit to the STR a document that defines the subcontractor work control process, the documents that will be used to implement the work control requirements and the process for configuration management of the work control implementing documents.

Personnel qualifications and competencies are derived from the identified scope of work and associated hazards. This requirement is communicated in Exhibit E, Technical Specifications. At the task level, additional requirements may be required based on the identification of controls.

Subcontractor Compliance

Subcontractors are required to demonstrate compliance through written programs that BJC reviewed prior to mobilization in accordance with PR-3404, *Subcontract/Purchase Order Administration*. Subcontractors will not be allowed to mobilize until acceptable programs have been reviewed by BJC in accordance with BJC-FS-1012, *Subcontract Technical Representative (STR) Requirements for Subcontract Execution* and Exhibit I, Subcontractor Submittal Requirement Summary.

Subcontractor Work Authorization

Contractual approval to perform work is managed by the BJC Procurement group. The project Procurement representative is responsible for the definition and administration of the subcontractor's scope of work under the subcontract. The STR is responsible for managing and monitoring the subcontractor's day-to-day performance of work in accordance with PR-3404, *Subcontract/Purchase Order Administration* and BJC-FS-1012, *Subcontract Technical Representative (STR) Requirements for Subcontract Execution*.

Subcontract Work Performance

At the activity level, a pre-job briefing is required before commencing work activities. The pre-job briefing must discuss the work to be performed, method for performing the work, hazards involved in performing the work, and the controls to be used to mitigate or preclude those hazards and protect the worker, public, and the environment. When appropriate, formal operational readiness assessments are conducted by BJC in accordance with DOE requirements.

Modifications to the subcontract are made in accordance with PR-3406, *Modification Process*.

Facility managers oversee all activities performed in his/her facility/facilities and ensure those activities are conducted in a safe manner and within the safety basis of the facility in accordance with BJC-GM-515, *Facility Management*.

Subcontract Accountability and Responsibility

Subcontractors are accountable for their ES&H performance as specified in the subcontract. Subcontractors provide a responsible line manager and an ES&H representative acceptable to BJC to direct field activities in their respective assignments.

Subcontractors are responsible for reporting all accidents, injuries, incidents, potential Price-Anderson Amendments Act (PAAA) noncompliances, environmental releases or noncompliances, and near misses to the STR and the project manager. The subcontractor project manager is responsible for initiating the appropriate level of incident investigation.

Subcontractors are also responsible for ensuring the competence of personnel performing work under their scope of work in accordance with Exhibit E, Technical Specifications. Personnel must have competence commensurate with their responsibilities. Subcontractors are responsible for maintaining current qualifications and training for their employees.

All subcontractor employees are required to perform work in a manner consistent with BJC ISMS principles and functions. Subcontractors are expected to take appropriate action when any employee demonstrates a lack of commitment to ISMS (Exhibit G).

Subcontractors are required to have a process in place for reviewing, addressing, and communicating lessons learned. They also are required to have a process that demonstrates implementation of worker feedback and continuous improvement.

Subcontractors are required to perform management and independent assessments in accordance with the requirements of their subcontract and the subcontractor's project-specific QA plan. The subcontractor must also implement actions to correct issues identified in these assessments.

Subcontractor Oversight

Managers of Projects and Functional Managers plan and perform oversight of subcontractors. The types and frequency of subcontractor oversight assessment activities are selected using a graded approach that is based upon the complexity, hazards, and risks associated with project activities.

Assessment activities for subcontractor work may include any or all of the following: Readiness evaluations, Subcontract Technical Representative (STR) reviews, Safety Advocate assessments, Quality Engineer oversight of implementation of the quality program, management walk-downs, field oversight, surveillances, technical reviews, document reviews, observations, independent assessments, management assessments, SME assessments, and other subcontractor oversight assessment activities deemed to be appropriate.

The subcontract management team led by the STR completes a monthly Performance Scorecard for any subcontract with a value above \$1M. The scorecard Performance Criteria are a tool used to communicate subcontractor performance to the responsible BJC manager and provides performance feedback to the subcontractor.



Fig. 4.2 Flowdown of ES&H requirements to subcontractors.

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5. SAFETY MANAGEMENT SYSTEMS/CONTROLS

A set of underlying management systems is integral to successfully implement any process or program. These systems provide the procedures and other administrative tools necessary for an integrated company approach.

Subject matter experts within the functional areas develop company level policies, plans, programs, and procedures needed for effective implementation in each subject matter area. Examples of safety management systems integral to effective implementation of ISMS within BJC are provided herein. A number of these systems support BJC Safety Management Programs (SMP) defined in accordance with DOE-STD-3009, *Preparation of Department of Energy Nonreactor Facility Documented Safety Analyses*. Appendix C, Safety Management Program Matrix, provides additional information regarding these Safety Management Systems.

Assessment (SMP/SMA)

The Assessment Program provides input to the BJC management team that BJC operations are conducted safely, effectively, efficiently, and in accordance with all applicable requirements. These requirements are detailed in the contract, standards, and procedures. The Safety Systems Integration organization establishes and maintains the assessment program, but each functional and project organization has responsibility for providing useful feedback from work performed and implementing appropriate improvement processes. Not only do the assessment programs strongly support the feedback and continuous improvement functions of ISMS, they assist in tailoring standards and requirements, guiding principles, and hazard assessment and control implementation functions. The assessment system is described in BJC-GM-1001, *Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description*. It involves independent assessments, management assessments, and event specific investigations. Independent assessments are governed by procedure BJC-PQ-1401, *Independent Assessment*, management assessments are governed by procedure BJC-PQ-1420, *Management Assessment*, and event investigations are governed by procedure BJC-PQ-1460, *Event Investigations and Critiques*.

Authorization Agreements

Authorization Agreements (AA) are developed in accordance with BJC-NS-1015, *Generation, Review, Approval and Control of Authorization Agreements and Radioactive Waste Management Basis*, and set forth the basis on which DOE authorizes Bechtel Jacobs Company to perform operations at selected facilities. The AA establishes and documents in one concise document the terms and conditions established and mutually agreed-upon for the operation of such facilities in a manner that preserves DOE's bases for authorizing facility operation. Further, the AA, by virtue of the signatures of the appropriate level of DOE and BJC management, signifies bi-lateral approval and acknowledgement that facility operation under those terms and conditions may be accomplished while protecting the workers, public and environment.

AAs are required for all BJC managed category 2 and 3 nuclear facilities. BJC has no category 1 nuclear facilities. At DOE's discretion and direction, Authorization Agreements may also be required for other facilities.

Although requirements for AA and/or Radioactive Waste Management Basis (RWMB) documents have separate drivers, much of the information required for each document is identical, such as Authorization Basis and Permit documentation. RWMBs are developed and controlled in accordance with BJC-NS-1015, *Generation, Review, Approval and Control of Authorization Agreements and Radioactive Waste Management Basis*. RWMBs provide assurance that the controls are developed, documented, and properly implemented for management of radioactive waste.

Budget and Financial Management

The BJC Budget and Financial Management System includes these business management functions: project work breakdown structure (WBS), scope definition, performance milestones, organizational breakdown structure (OBS), planning assumptions, cost estimate, budget, risk-based prioritization, critical path schedule logic, project schedule, charge code structure, cost accounting, funds management, and baseline change control. These functions are integrated in the project Life Cycle Baseline (LCB), and are maintained under configuration management via a joint BJC/DOE baseline change control process. The LCB provides the basis for establishing annual performance based incentives (PBIs) and performance objectives.

Communications

Employees are encouraged to communicate with management any concerns regarding safety or work processes or ES&H concerns as described in BJC-EH-2015, *Safety Concerns (I Care/We Care)*. Each employee can also use Suspend/Stop Work Authority if necessary to address safety concerns.

Employees also provide input through the BJC Zero Accident Council. This council, chaired by the company President, is made up of a wide representation of BJC management, subcontractors, and the workforce. The council members meet monthly to discuss safety performance, I Care/We Care, concerns, and safety management programs. Workers are encouraged to bring their safety issues to the attention of the council members if they are not promptly resolved through other processes.

The SSI and Public Relations organizations have program-level responsibility for communicating ES&H awareness to the workforce, educating the stakeholders, and communicating with the public regarding work performed.

Conduct of Operations (SMP/SMA)

The Conduct of Operations Program ensures that facility operations are managed, organized, and conducted in a manner that assures an appropriate degree of rigor in performance and, therefore, contributes to the safe and reliable operations. The program is based on DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*. BJC-GM-2000, *Conduct of Operations for Project, Facilities, and Activities* describes the process for implementing Conduct of Operations at BJC.

Configuration Management (SMP/SMA)

Configuration Management for BJC is intertwined into the company procedures and proforma. BJC-NS-1016, *Configuration Management Program for Nuclear and Non-Nuclear Facilities*, along with supporting procedures establishes company expectations for configuration management for structures, systems, and components identified in associated safety basis documents as safety class, safety significant, or defense in depth.

Control of changes and as-found conditions is implemented through BJC-NS-1001, *Unreviewed Safety Question Determinations for Nuclear Category 2 and 3 Facilities* and BJC-NS-1008, *Unreviewed Change Determinations for Radiological and Non-Nuclear Facilities*. The BJC USQ procedure was approved by DOE.

BJC procedures are controlled in accordance with procedure BJC-PQ-1107, *Performance Document Process*, and Proforma are controlled in accordance with procedure BJC-PR-1002, *Processing Proforma Documents*.

Requirements for new designs and changes to existing designs are described in procedure PQ-A-1060, *Design*. Other specific areas supporting configuration management for BJC include:

- System Engineers serve as members of the Change Control Authority whenever changes involve their assigned safety systems;
- Project calculations are checked, revised, and approved in accordance with procedure EDPI-4.37-01, *Project Calculations*;
- Project drawings are controlled in accordance with procedure EDPI-4.46-01, *Project Drawings*;
- Project Specifications are controlled in accordance with procedure EDPI-4.49-01, *Project Specifications*;
- Field change requests are controlled in accordance with procedure EDPI-4.62-01, *Field Change Request (FCR)*;
- Requirements for an independent design review of selected project drawings are listed in procedure EDPI-4.34-01, *Off-Project Design Review*; and

Configuration management controls establish the basis for comparing planned tasks to known safe conditions.

Criticality Safety (SMP/SMA)

Procedure BJC-NS-1003, *Nuclear Criticality Safety Program*, establishes the policy, guidelines, rules, and regulations for the BJC Nuclear Criticality Safety Program to ensure that nuclear criticality safety hazards are evaluated and nuclear criticality safety limits and controls are established to provide personnel and public safety. This procedure also establishes requirements for qualification of nuclear criticality safety personnel.

Emergency Management (SMP/SMA)

The Emergency Management System directs response to emergency and off-normal conditions. It focuses on identifying hazards, planning for response to the hazards identified, communicating the appropriate response to the workforce, and training individuals and organizations to mitigate and stabilize the hazards when needed. The emergency management hazards identification and analyses are coordinated with the safety basis development process to assure an integrated and consistent approach. Responsibility for the emergency management system rests with the Safety Systems Integration Organization.

Environmental Compliance and Protection (SMP/SMA)

The Environmental Compliance and Protection (EC&P) Program is an integral element of BJC Safety Management Programs. The Company's Environmental Management goals, roles, and responsibilities and ES&H charter are documented in BJC-GM-007, *Environmental Management*, and BJC-GM-112, *Environment, Safety and Health*, and are integrated in each project's work activity through the ISMS process. EC&P oversight and assessment activities are implemented through BJC-EH-3001, *Environmental Compliance & Protection Oversight Program Description*. BJC Program Descriptions to ensure protection of environmental resources have been implemented to address all major environmental laws, regulations, and DOE Orders. Special requirements in the BJC subcontract proforma are aligned with each subcontractors' scope of work and documented in each subcontract to ensure environmental compliance and resource protection flowdown through the subcontractor's ES&H Plan, procedures, work controls, and required submittals. BJC EC&P leads are deployed to each Project to oversee all subcontractor activities performed and to ensure that those activities are conducted in a manner that comply with federal, state, and local environmental laws, protect the environment, and that are within the safety basis of the facility.

Facility Management (SMP/SMA)

BJC-GM-515, *Facility Management* establishes the roles and responsibilities for the Facility Management Program at BJC. Facility managers oversee all activities performed in his/her facility/facilities and ensure those activities are conducted in a safe manner and within the safety basis of the facility.

Fire Protection (SMP/SMA)

BJC-FP-2001, *Fire Protection Program Description*, defines the scope, roles and responsibilities, and requirements for fire protection activities and oversight functions. The program description also defines responsibilities for ensuring compliance with fire protection requirements.

Industrial Hygiene (SMP/SMA)

The Industrial Hygiene Program establishes the policies and procedures that ensure hazardous operations are conducted in a manner that safeguards the health and safety of the public, on-site workers, and the environment. The various exposure hazards or workplace stresses that cause sickness, impaired health, or significant discomfort in workers can be classified as chemical, physical, biological, or ergonomic. Hazards are assessed and appropriate controls are specified such that specific hazards do not present unanalyzed risk. Hazard analyses are performed to anticipate, recognize, evaluate, and control exposure hazards or stresses arising in or from the workplace. Workers are protected from workplace hazards through the implementation of engineering controls, administrative controls, and/or personal protective equipment. A list of the Industrial Hygiene Program documents is included in Section 08 of Appendix C.

Issues Management and Lessons Learned (SMP/SMA)

The Issues Management and Lessons Learned Systems provide processes for collecting data from internal and external sources and developing improvements to enhance the safe performance of work. Figure 5.1 provides an overview of the mechanisms of these systems. Performance/Quality Assurance is responsible for maintaining the Issues Management and Lessons Learned Systems, which primarily support the feedback and continuous improvement function of ISMS. Each organization (program, function, or project) is responsible for identifying information that should be documented to facilitate improved work performance, and for assessing available information for applicability to their scope of work.

The Issues Management and Lessons Learned Systems include collecting, analyzing, and trending data from audits, assessments, and occurrence reports. Additional input includes incident investigations, root cause analyses, and corrective action development. The process provides useful lessons learned information for scope definition and hazard identification, supports line managers in tracking corrective actions for findings. The processes are identified in procedures BJC-PQ-1210, *Issues Management Program*, BJC-PQ-1240, *Lessons Learned Program*, and BJC-PQ-1230, *Root Cause Analysis*.



Input

Work activities
Occurrence reports
Incident reports
ES&H performance objectives
Contract requirements

Output

Root cause analysis
Adverse trend identification
Lessons learned
Corrective action

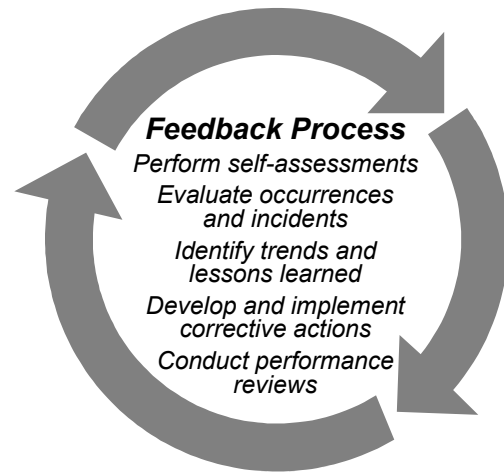


Fig. 5.1 Information management systems and lessons learned systems support the feedback process of ISMS.

Maintenance Management (SMP/SMA)

The Maintenance Management Program ensures that nuclear facility maintenance is conducted in a safe, efficient, and cost-effective manner and therefore, contributes to safe and reliable operations. The program is based on DOE Order 433.1, *Maintenance Management Program for DOE Nuclear Facilities*. BJC-FS-1035, *Nuclear Facility Maintenance Program* describes the process for implementing Conduct of Maintenance.

Nuclear and Facility Safety (SMP/SMA)

BJC requires that facilities, processes, and activities with a nuclear hazard category of 2 or 3, or radiological or a hazard class of high, moderate, or low, be managed in accordance with an up-to-date safety basis documents. The Safety Basis may include Safety Analysis Reports, TSRs, Auditable Safety Analyses, Basis for Interim Operations, and DOE-issued Safety Evaluation Reports. The Safety Basis will also include Unreviewed Safety Question packages submitted to and approved by DOE until it is incorporated into the Safety Basis.

Nuclear hazard category 2 and 3 facilities will have a safety basis document prepared in accordance with a 10 CFR 830 Subpart B Implementation Plan and the appropriate 10 CFR 830 Subpart B “safe-harbor” method, irrespective of their non-nuclear hazard classification. DOE approval of safety basis documents is required on nuclear hazard category 2 and 3 and the categorization of radiological 1 activities.

The following documents govern the documented safety basis processes: BJC-NS-1001, *Unreviewed Safety Question Determinations for Nuclear Category 2 and 3 Facilities*, BJC-NS-1002, *Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities*, BJC-NS-1008, *Unreviewed Change Determinations for Radiological and Non-Nuclear Facilities*, and BJC-NS-1009, *Safety Documentation for Radiological and Non-Nuclear Facilities*.

Occupational Safety (SMP/SMA)

The BJC Occupational Safety Program establishes roles, responsibilities and expectations for worker safety through the implementation of industrial safety requirements contained in the Occupational Safety

and Health Act (OSHA). The BJC Occupational Safety Organization establishes and maintains company level policies, procedures, subcontract proforma, and management systems and provides oversight and support to senior management and project teams throughout the company to facilitate effective integration of safety into work execution. A list of the Occupational Safety Program documents is included in Section 17 of Appendix C.

Occurrence Reporting (SMP/SMA)

BJC-PQ-1220, *Occurrence Notification and Reporting*, establishes the roles and responsibilities for the Occurrence Reporting Program at BJC. The Occurrence Reporting Program applies to the activities, projects and operations of the BJC and its employees. Occurrences involving subcontractors, vendor service personnel, or visitors are the responsibility of the contracting host organization.

Procedures (SMP/SMA)

The BJC performance document process establishes requirements for documents (including procedures) used to establish Company expectations, control processes, activities and operations. Performance documents exist with four general scopes of applicability:

- Company documents are corporate in nature; apply to multiple projects, functions and sites; may be implemented with out a project, functional, or site procedure (unless specifically required for implementation); and reflect interface requirements necessary to carry out programs and work within BJC.
- Functional documents apply solely to a single functional organization; describe how to accomplish the administrative or technical responsibilities of the function; and govern functional personnel deployed to projects.
- Project documents apply within a single project organization; typically govern interface requirements within the project organization; and include self-performance of tasks via work control.
- Site documents apply only at a given site; are typically multi-functional and multi-project in scope; and may be applicable to or define site interface agreements with other Department of Energy (DOE) Prime Contractors or tenants.

Specific document types and the process for generating a new or revising a performance document is contained in BJC-PQ-1107, *Performance Document Process*.

Procurement

Procurement Systems provide mechanisms for acquiring goods and services for functional and project organizations to support completion of their scope of work. These systems are the responsibility of the Procurement organization.

Procurement Systems support ISMS functions for scope definition and implementation of controls to mitigate hazards. Procurement Systems also support communication between BJC and its subcontractors. The primary means through which the procurement processes implement ISMS are:

- maintenance of subcontract proforma,
- use of subcontract formation teams,
- preparation and organization of all exhibits in requests for proposals,
- establishment and maintenance of a qualified bidders list,
- evaluation and administration of subcontracts,
- Proforma Configuration Control and Subcontract Proforma Document Report and Tracking (SPDRT), and
- Bechtel Procurement System (BPS).

BJC ES&H expectations for subcontractors are detailed in the standard subcontract language (Exhibit G) developed by the ES&H organization. For each scope of work, the subcontract formation team tailors Exhibit G to address the hazards for the scope of work. Further discussion of the interfaces between ES&H and Procurement is available in Section 4 of this document.

Quality Assurance (SMP/SMA)

BJC/OR-43, *Bechtel Jacobs Company LLC Quality Assurance Program Plan for Environmental Management and Enrichment Facilities at Oak Ridge, TN, Portsmouth, Ohio, and Paducah, Kentucky*, describes the BJC QA Program. This Quality Assurance Program Plan provides the primary requirements for the integration of quality functions into all aspects of BJC activities.

Radiation Protection (SMP/SMA)

The BJC Radiation Protection Program (RPP) is defined in BJC/OR-301, *Radiation Protection Program for 10 CFR 835 Occupation Radiation Protection*. The intent of the RPP is to minimize exposure to ionizing radiation for employees, the public, and the environment to levels as low as reasonably achievable (ALARA). This RPP incorporates an aggressive ALARA policy using a graded approach to the application of pre-job ALARA reviews, workplace monitoring, job site inspections, and radiological performance indicators to assure accomplishment of annually established radiological performance goals. The RPP is a management tool that enhances the ability to carry out tasks in a manner that will protect employees, the public, and the environment. Subcontractors are contractually required to comply with the BJC RPP.

Radioactive and Hazardous Waste Management (SMP/SMA)

The Radioactive and Hazardous Waste Management Program establishes processes to generate, characterize, package and control radiological and hazardous waste. Waste management policies, plans, and/or procedures are established, implemented and maintained, and address: (1) waste stream identification/profiling; (2) waste information reporting; (3) waste acceptance criteria; (4) waste characterization, segregation, and recycling; and (5) on-site and off-site treatment, storage, and disposal. A list of Radioactive and Hazardous Waste Management program documents is included in Section 09 of Appendix C.

Records Management (SMP/SMA)

The Bechtel Jacobs Records Management Program establishes controls and protocols for the creation, identification, control and management of classified and unclassified records. Program guidelines are provided in BJC-OS-1001, *Records Management, Including Document Control* and BJC/OR-60, *Requirements for Bechtel Jacobs Company LLC Documents*. Classified documents are handled in accordance with ES/PSO-1, *Manual for the Protection and Control of Classified Matter and Other Protected Information*.

Standards Selection and Maintenance

A key element of integrated safety management is the selection of standards and maintenance of the standards set. This set is the end result of a process for reviewing laws, regulations, and standards to determine applicability to the scope of work. The process involves the workers in determining the adequate level of protection for accomplishing the work. The process uses a bottoms-up team approach to tailoring requirements. The benefits of the process include: selection of the most appropriate requirements for the scope of work, cost savings, increased schedule efficiency, and increased worker involvement. This process is described in procedure BJC-PQ-1150, *Standards Management*.

Standards Identification Teams are chartered by the Standards Review Board (BJC-GM-209) for selection of standards and determination of impact on BJC work scope. The teams are made up of subject matter experts, project and procurement representatives, and worker/bargaining unit representatives. While not a part of the Identification Team, representatives from DOE are asked to participate in team discussions on standards selection to ensure DOE's expectations are appropriately considered. If selected standards result in a resource impact, implementation plans are developed and submitted to DOE for approval.

New and/or revised DOE standards (orders, manuals, technical standards, guides, etc.) are screened by P/QA for applicability to BJC work scope and to recommend an approach for developing BJC's position on incorporation into the contract. Applicable standards are routed to functional managers and subject matter experts and dispositioned in accordance with BJC-PQ-1150, *Standards Management*. Necessary actions to address new and/or revised federal, state and local laws and regulations are considered by the Standards Review Board (BJC-GM-209). Standards Review Board responsibilities include the evaluation of issues to determine the need for considering changes to BJC contractual standards due to:

- challenges that relate to the appropriateness of safety standards,
- changes to federal, state, and local laws and regulations,
- changes to voluntary consensus standards that are included as contractual standards,
- changes to approved DOE directives that address safety requirements, and
- new work scope or hazards.

Links to the current set of contractual standards and requirements are maintained on the BJC web. Additional links are provided for reference to DOE's directives.

Standards management processes have also been established for:

- implementation planning,
- flowdown of requirements, and
- feedback and continuous improvement.

Subject Matter Experts

Subject Matter Areas have been established and are supported by Subject Matter Experts (SMEs) assigned for both administrative and safety program areas in accordance with BJC-PQ-1170, *Control of Subject Matter Area Designations and Subject Matter Expert Assignments*. SMEs serve as the primary point of contact with the appropriate DOE Program Office and serve as the BJC single point of contact for the specific subject matter area and are responsible for promoting implementation of the subject matter area throughout all functions and projects. SMEs support program definition by selecting applicable standards and requirements through implementation of BJC-PQ-1150, *Standards Management*. SMEs support standards and requirements implementation through the flowdown of requirements for self-performed work using BJC-PQ-1107, *Performance Document Process*, and for subcontracted work using BJC-PR-1002, *Processing Proforma Documents*. SMEs provide oversight of standards and requirements implementation through management assessment processes defined by BJC-PQ-1420, *Management Assessment*. SMEs are expected to have comprehensive knowledge and relevant expertise in the subject matter area based on qualification, training, experience, and/or education. An SME's working-level knowledge is characterized by a detailed understanding of the subject matter area and the ability to apply this knowledge to assigned tasks.

System Engineering (SMP/SMA)

The System Engineer Program (SEP) has been established to ensure the ability of active safety systems managed by BJC perform their intended safety function(s) as defined in the governing safety basis documents. The SEP implements the requirements of DOE Order 420.1A, *Facility Safety*, Section 4.5

System Engineer Program. The Program is described in detail in BJC/OR-1281, *System Engineer Program Description For Bechtel Jacobs Company*. System Engineers are assigned to active safety systems identified in facility safety basis documents based on qualification, training, experience and education. Their primary responsibilities include maintaining a comprehensive understanding and working level knowledge of assigned systems, serving as members of the Change Control Authorities for changes involving their assigned systems to assure configuration control, developing and/or maintaining System Descriptions, and providing technical support to the Facility Managers and staff in the operations, maintenance, inspections, testing and operability determinations of assigned systems.

Training and Qualification (SMP/SMA)

The BJC Training and Qualification Process assures that needed skills for the workforce are identified and developed, and documents knowledge, experience, abilities, and competencies of the workforce for key positions requiring qualification. This process is described in procedure BJC-HR-0702, *Training Program*. Training Position Descriptions, developed in accordance with procedure BJC-HR-0710, *Training Position Descriptions*, are used to document the following for a specific job position or assignment.

- roles and responsibilities,
- education,
- experience,
- previous qualification or certifications
- required company training,
- required functional training,
- required project/facility specific training, and
- task/activity level training.

The training implementation matrix, BJC-HR-0725, *BJC Training Implementation Matrix for Category 2 and 3 Nuclear Facilities*, describes how BJC will implement the requirements of DOE Order 5480.20A, *Selection, Training and Qualification Requirements for Personnel in DOE Nuclear Facilities*. The matrix requirements flow into the BJC implementing procedure BJC-HR-0724, *Training and Qualification Program for BJC Category 2 and 3 Nuclear Facilities*. Position specific qualification requirements are contained in the BJC qualification standard, BJC/OR-1088, *Bechtel Jacobs Nuclear and Radiological Facilities Qualification Standard*.

Transportation (SMP/SMA)

The Transportation Program establishes and enforces processes to identify, classify, package, mark, label, placard, load, unload, secure, transport and control waste with radiological, chemical and physical hazards. Packaging and transportation policies, plans, and/or procedures are developed, controlled, and implemented to address: (1) hazardous material identification, (2) classification, (3) containerization, (4) hazard communication, (5) personnel training, and (6) oversight of subcontractors engaged in packaging and transportation activities.

Work Control

The Work Control System, as described in BJC-FS-1001, *Work Control Requirements*, provides processes to convert the task level scope of work into a working level document that is easy for the workforce (subcontractor or self-perform) to understand and use. The Field Services Organization is responsible for developing and maintaining the work control processes, which support all five ISMS core functions. Examples of work control process elements are:

- operating procedures,
- training,

- work packages,
- work group coordination,
- review of lessons learned,
- pre-job and post-job briefings,
- work monitoring and oversight,
- daily oversight and management of subcontractors, and
- worker involvement.

Subcontractors performing field work must have a Work Control System that implements the work control requirements contained in their subcontract.

6. INTERFACES WITH DOE AND OTHER PRIMES

DOE

The primary interface between BJC and DOE is the prime contract. Organizational interfaces and relationships are maintained through routine and ongoing face-to-face communications, including regularly scheduled meetings between senior officials from BJC and DOE. Technical direction and overall management issues are handled by this DOE/BJC leadership team. These meetings are used to review progress, performance, management issues, and changes. In addition, BJC and DOE personnel interact on every level on a regular basis to contribute to the team environment for contract execution.

OTHER PRIME CONTRACTORS

BJC manages the performance of work at multiple DOE sites and interacts with multiple DOE Prime Contractors, United States Enrichment Corporation (USEC), and with Reindustrialization tenants at the ETTP site. BJC functions within this framework in a cooperative, disciplined, and businesslike manner to meet DOE objectives. Interfaces between companies are to be managed to assure that quality, safety and health, environmental, security, access, emergency preparedness, infrastructure, financial management, and other site requirements are met.

DOE requirements for performing business at DOE sites and facilities are defined in DOE contract language, leases, and other DOE formal direction. DOE Prime Contractors, USEC, and tenants co-exist within the boundaries of DOE-defined requirements, commitments, and responsibilities. It is recognized that agreements may be necessary between interfacing companies in order to adequately and effectively define expectations and manage interfaces, shared services, and/or systems. BJC external interfaces are to be managed by establishing interface agreements that clearly define roles, responsibilities, and expectations of interfacing organizations. Types of interface agreements include:

- Master Agreement for Services,
- Memorandums of Understanding, and
- Other binding corporate agreements that define divisions of responsibility or liability with other parties outside of BJC or require BJC to commit personnel, equipment, or funds that were assigned to BJC by DOE.

For tasks that are performed on the BJC scope of work by other DOE prime contractors, the work is performed to meet the requirements of the applicable ES&H requirements. This is specified in the work authorization and is accomplished in the most efficient way for each prime contractor. Work is monitored by the assigned STR or Project Manager, and changes to work practices are evaluated for compliance with BJC requirements.

For example, BWXT Y-12 performs work in accordance with its procedures, which satisfy BWXT Y-12 S/RIDS.

UT-Battelle will perform work in accordance with its procedures supported by the following arrangement:

- UT-Battelle will maintain an evaluation that demonstrates that its current procedures satisfy BJC standards set.
- BJC will notify UT-Battelle of changes to BJC standards set.

At Paducah and Portsmouth, the USEC performs work for BJC. This work is controlled by work authorizations and is performed using USEC procedures. USEC procedures must satisfy Nuclear Regulatory Commission, Occupational Safety and Health Administration, and applicable local, state, and federal environmental regulations. This regulatory framework parallels the BJC standards set and results in a structured approach to safe performance of work.

7. MAINTAINING AND IMPROVING ISMS

Purpose

The Department of Energy Acquisition Regulation (DEAR) 48CFR970.5223-1, requires DOE and its contractors to maintain and improve ISMS. Maintenance of the BJC ISMS is to ensure work continues to be conducted efficiently and in a manner that protects the health and safety of the worker, the public and the environment. To meet this intent, compliance with current requirements (directives, laws, regulations, etc.), and maintenance of the safety basis and worker protection programs are maintained current and effective. The mechanisms described in this ISMS document are used to ensure these aspects of the system receive appropriate review and analysis through effective feedback and assessment processes, thus providing the opportunity for continuous improvement.

Configuration Control

BJC ensures that processes and procedures identified in Appendix B are consistent with the ISMS Description. Intent changes to these identified processes and procedures are evaluated before any changes are made in accordance with procedure BJC-PQ-1107, *Performance Document Process*. The ISMS Description is updated as needed to incorporate company-level process improvements.

ISM System Effectiveness

BJC applies key processes inherent to the ISMS to measure, maintain and improve the effectiveness of the ISMS throughout the year. Standards management, processes to ensure competence commensurate with responsibilities, and authorization basis upgrades are continuous, ongoing ISMS maintenance processes. The lessons learned process described in procedure BJC-PQ-1240, *Lessons Learned Program*, provides feedback for improving the system. Trending and reporting safety performance objectives, performance measures and commitments are tools for measuring system effectiveness.

These processes are coupled with an ongoing, integrated assessment program described in BJC-GM-1001, *Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description*, which is applied at each level of the organization from the worker and individual activities through the facilities, including subcontractor activities and the site. Independent and management assessments are performed in accordance with procedures BJC-PQ-1401, *Independent Assessment* and BJC-PQ-1420, *Management Assessment*. Subject Matter Experts also participate in the assessment processes.

The CPEB establishes trending protocols that provide guidance and instruction for performing routine trend generation and analysis of data from I/CATS and other sources. Trending translates assessment results into information to facilitate the improvement of safe, efficient, effective work activities. Trend analysis is used to evaluate issues and provide feedback for continuous improvements. Results of the trending and analysis process are summarized in a periodic report to BJC management.

As determined to be appropriate, the BJC Six Sigma improvement process may be utilized to analyze the process and to define improvement actions. The CPEB reviews and evaluates this data to assess ISMS effectiveness/progress and to determine annual ISMS objectives, measures, and commitments.

Annual Assessments

On an annual basis, ISMS feedback information is analyzed to determine the status of the ISMS program relative to implementation, integration, and effectiveness. The results of this annual assessment are documented in the ISMS Annual Report. The CPEB prepares the Annual Report which is the final product of the annual ISMS maintenance and update process, summarizing:

- actions taken to evaluate system effectiveness,
- ISMS objectives, measures, and commitments,
- safety performance, and
- changes (if needed) to the ISMS Description.

APPENDIX A
ISMS GUIDELINES MATRIX

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APPENDIX A – ISMS GUIDELINES MATRIX

Purpose

This appendix provides guidelines as required by 48CFR970.5204(e).

The table provided on the following pages provides a mapping of each ISMS guideline element to the respective ISMS Description section, as well as to other company-level documents.

Sources

The following sources were used to develop these guidelines:

- DOE P 450.4, Safety Management System Policy, October 15, 1996.
- DEAR Clause: 970.5204-2, Integration of Environment, Safety and Health into Work Planning and Execution. (June 1997)
- LAWS Clause: 970.5204-78, Laws, Regulations, and DOE Directives. (June 1997).

NOTE: On the following pages abbreviations are used to reference ISMS Functions (e.g., [F1]), ISMS Principles (e.g., [P1]), DEAR Clause sections (e.g., [D-(a)]), and LAWS Clause sections (e.g., [L-(a)]).

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APPENDIX A – ISMS GUIDELINES MATRIX

ISMS Element	ISMS Description Reference	BJC Document	Subcontractor Proforma
Safety encompasses Environment, Safety, and Health , including pollution prevention and waste minimization [D-(a)(1)]	Section 1, Policy and Management Commitment and Leadership, page 5, and Pollution Prevention, page 6	<ul style="list-style-type: none"> • Policy 102, <i>Integrated Safety Management System</i> 	Exhibit G, ES&H
“Employees” include subcontractor employees [D-(a)(2)]	Scope, page 1	<ul style="list-style-type: none"> • BJC-EH-2015, <i>Safety Concerns (I Care/We Care)</i> 	
In performing work under the contract, the contractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The contractor shall exercise a degree of care commensurate with the work and the associated hazards. The contractor shall ensure that management of environment, safety, and health (ES&H) functions and activities becomes an integral but visible part of the contractor’s work planning and execution processes. [D-(b)]	Section 1, Commitment, pages 5-8, specifically Our Safety Culture and Policy, page 5 Section 2, Objective, page 9	<ul style="list-style-type: none"> • BJC-FS-1001, <i>Work Control Requirements</i> • BJC-EH-2010, <i>Hazard Assessment</i> 	Exhibit G, ES&H Exhibit E— <i>Technical Specification for Subcontractor Work Control Requirements</i>
The contractor shall, in performance of work, ensure that - line management is responsible for the protection of employees, the public, and the environment. Line management includes those contractor and subcontractor employees managing and supervising employees performing work. [P1]	Section 1, Management Commitment and Leadership, page 5 Section 2, Guiding Principles, pages 9-10	<ul style="list-style-type: none"> • BJC-EH-2010, <i>Hazard Assessment</i> • BJC-FS-1001, <i>Work Control Requirements</i> • Policy 401, <i>Managers of Projects</i> • BJC-GM-515, <i>Facility Management</i> 	Exhibit G, ES&H Exhibit E— <i>Technical Specification for Subcontractor Work Control Requirements</i>
Clear and unambiguous lines of authority and responsibility for ensuring ES&H requirements are established and maintained at all organizational levels. [P2]	Section 2, Guiding Principles, pages 9-10	<ul style="list-style-type: none"> • Bechtel Jacobs Company organization chart • Policy 102, <i>Integrated Safety Management System</i> • BJC-GM-528, <i>Organizational Chart Process</i> • BJC-GM-1400, <i>Integrated Safety Management System Description</i> • BJC-GM-515, <i>Facility Management</i> • BJC-HR-0710, <i>Training Position Descriptions</i> 	Exhibit G, ES&H

ISMS Element	ISMS Description Reference	BJC Document	Subcontractor Proforma
The contractor shall submit to the contracting officer documentation of its System for review and approval. Dates for submittal, discussions, and revisions to the System will be established by the contracting officer. Guidance on the preparation, content, review, and approval of the System will be provided by the contracting officer. On an annual basis, the contractor shall review and update, for DOE approval, its safety performance objectives, performance measures, and commitments consistent with and in response to DOE's program and budget execution guidance and direction. Resources shall be identified and allocated to meet the safety objectives and performance commitments as well as maintain the integrity of the entire System. Accordingly, the System shall be integrated with the contractor's business processes for work planning, budgeting, authorization, execution, and change control. [D-(e)]	Section 2, Define Scope of Work, pages 13-14 Section 6, Maintaining and Improving ISMS, pages 41-42	<ul style="list-style-type: none"> • BJC/OR-162, <i>Life Cycle Baseline Update Guidance Document</i> • BJC-GM-1001, <i>Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description</i> 	
<i>Define Scope of Work [F1]</i>	Section 2, Define Scope of Work, Translate the Contract Scope into Work, pages 13-14	<ul style="list-style-type: none"> • BJC/OR-162, <i>Life Cycle Baseline Update Guidance Document</i> • BJC-FS-1001, <i>Work Control Requirements</i> 	Exhibit D, Scope of Work Exhibit E, Technical Specifications for Subcontractor Work Control Requirements
The ISMS Description should describe the mechanisms for establishing performance objectives/measures for work assigned to the contractor. [D-(e)]	Section 2, Set Expectations, page 14	<ul style="list-style-type: none"> • DOE/BJC Performance Agreements for individual Performance Based Incentives 	
The contractor shall, in performance of work, ensure that – Resources are effectively allocated to address ES&H programmatic and operational considerations. Protecting employees, the public, and the environment is a priority whenever activities are planned and performed. [P4]	Section 2, Prioritize Tasks and Allocate Resources, pages 14	<ul style="list-style-type: none"> • BJC-PC-1004, <i>Baseline Management and Change Control</i> • PR-3404, <i>Subcontract/Purchase Order Administration</i> 	

ISMS Element	ISMS Description Reference	BJC Document	Subcontractor Proforma
Analyze Hazards [F2]	Section 2, Analyze Hazards, page 15	<ul style="list-style-type: none"> • BJC-NS-1001, <i>Unreviewed Safety Question Determinations For Nuclear Category 2 & 3 Facilities</i> • BJC-NS-1002, <i>Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities</i> • BJC-NS-1008, <i>Unreviewed Change Determinations for Radiological and Non-Nuclear Facilities</i> • BJC-NS-1009, <i>Safety Documentation for Radiological and Non-Nuclear Facilities</i> • BJC-EH-2010, <i>Hazard Assessment</i> • BJC-FS-1001, <i>Work Control Requirements</i> • BJC-FP-2001, <i>Fire Protection Program Description</i> • BJC/OR-301, <i>Radiation Protection Program Plan</i> 	Exhibit E, Technical Specifications for Nuclear Facility Safety and Subcontractor Work Control Requirements Exhibit G, ES&H
Categorize Hazards	Section 2, Categorize Hazards, page 15	<ul style="list-style-type: none"> • DOE-STD-1027-92 • BJC-NS-1009, <i>Safety Documentation for Radiological and Non-Nuclear Facilities</i> • BJC/OR-1112, <i>Hazard Categorization/Classification and Hazards Analysis Application Guide</i> 	Exhibit E, Technical Specifications for Nuclear Facility Safety and Subcontractor Work Control Requirements
Develop/Implement Controls [F3]	Section 2, Develop and Implement Hazard Controls, pages 15-17	<ul style="list-style-type: none"> • BJC-NS-1001, <i>Unreviewed Safety Question Determinations For Nuclear Category 2 & 3 Facilities</i> • BJC-NS-1002, <i>Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities</i> • BJC-NS-1008, <i>Unreviewed Change Determinations for Radiological and Non-Nuclear Facilities</i> • BJC-NS-1009, <i>Safety Documentation for Radiological and Non-Nuclear Facilities</i> • BJC-EH-2010, <i>Hazard Assessment</i> • BJC-FS-1001, <i>Work Control Requirements</i> • BJC-PQ-1107, <i>Performance Document Process</i> • BJC-FP-2001, <i>Fire Protection Program Description</i> • BJC/OR-301, <i>Radiation Protection Program Plan</i> 	Exhibit E, Technical Specifications for Nuclear Facility Safety and Subcontractor Work Control Requirements Exhibit G, ES&H

ISMS Element	ISMS Description Reference	BJC Document	Subcontractor Proforma
<i>Identify Standards and Requirements [P5]</i>	Section 2, Develop and Implement Hazard Controls and Identify Standards and Requirements, pages 15-16	<ul style="list-style-type: none"> • BJC-PQ-1150, <i>Standards Management</i> 	Exhibit G, ES&H
<p>The ISMS Description should describe the mechanism to be used to establish the set of standards and requirements for each facility and activity.</p> <ul style="list-style-type: none"> • The set tailored for each facility/activity should be commensurate with the hazards involved. • The mechanism should be an established, accepted process (e.g., S/RIDs, WSS) or include the fundamental objectives and principles of accepted processes. • The mechanism should stress the use of applicable laws, statutes, Federal rules, national consensus standards, DOE directives, and DOE technical standards. • The mechanism should include a process for DOE concurrence. [L-(c)] 	Section 2, Analyze Hazards and Develop and Implement Hazard Controls, pages 15-17	<ul style="list-style-type: none"> • BJC-PQ-1150, <i>Standards Management</i> • BJC-NS-1001, <i>Unreviewed Safety Question Determinations For Nuclear Category 2 & 3 Facilities</i> • BJC-NS-1002, <i>Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities</i> • BJC-NS-1008, <i>Unreviewed Change Determinations for Radiological and Non-Nuclear Facilities</i> • BJC-NS-1009, <i>Safety Documentation for Radiological and Non-Nuclear Facilities</i> 	

ISMS Element	ISMS Description Reference	BJC Document	Subcontractor Proforma
<i>Establish Safety Envelope</i>			
The contractor shall, in performance of work, ensure that - The conditions and requirements to be satisfied for operations to be initiated and conducted are established and agreed upon by DOE and the contractor. These agreed upon conditions and requirements are requirements of the contract and binding upon the contractor. The extent of documentation and level of authority for agreement shall be tailored to the complexity and hazards associated with the work and shall be established in a Safety Management System. [P7]	Section 2, Confirm Readiness, pages 17-18, and Operations Authorization, page 18 Section 5, Authorization Agreements, page 33	<ul style="list-style-type: none"> • BJC-PQ-1510, <i>Readiness Reviews for Nuclear Category 2 and 3 Facilities/Activities</i> • BJC-PQ-1520, <i>Readiness Reviews for Radiological, Non-Nuclear and Other Industrial Facilities/Activities</i> • BJC-NS-1015, <i>Generation, Review, Approval and Control of Authorization Agreements and Radioactive Waste Management Basis</i> • BJC-NS-1017, <i>Implementation Validation Review Process</i> • BJC-GM-515, <i>Facility Management</i> 	
The contractor shall comply with, and assist the Department of Energy in complying with, ES&H requirements of all applicable laws and regulations, and applicable directives identified in the clause of the contract on Laws, Regulations, and DOE Directives. The contractor shall coordinate with Federal and non-Federal agencies having jurisdiction over ES&H matters under the contract. [D-(f)] [L-(a)] [L-(b)]	Section 2, Identify Standards and Requirements, page 16; Implement Controls, page 17; and Perform Work, pages 17-19	<ul style="list-style-type: none"> • ORO O 250, <i>Standards Management</i> • BJC-PQ-1150, <i>Standards Management</i> 	Exhibit G, ES&H
The contractor is responsible for compliance with the ES&H requirements applicable to the contract regardless of the performer of the work. [D-(h)] [L-(d)]	SCOPE, page 1	<ul style="list-style-type: none"> • BJC-GM-1400, <i>Integrated Safety Management System Description</i> 	Exhibit G, ES&H
The contractor shall include a clause substantially the same as this clause in the subcontracts involving complex or hazardous work on site at a DOE-owned or –leased facility. Such subcontracts shall provide for the right to stop work under the conditions described in paragraph (g) of this clause. Depending on the complexity and hazards associated with the work, the contractor may require that the subcontractor submit a Safety Management Plan for the contractor’s review and approval. [D-(i.)]	Section 2, Suspend/Stop Work Authority, page 19	<ul style="list-style-type: none"> • BJC-EH-2018, <i>Suspension of Work (Safety Related)</i> 	Exhibit G, ES&H

ISMS Element	ISMS Description Reference	BJC Document	Subcontractor Proforma
<i>Perform Work [F4]</i>	Section 2, Perform Work, pages 17-19	<ul style="list-style-type: none"> • BJC-PQ-1510 <i>Readiness Reviews for Nuclear Category 2 and 3 Facilities/Activities</i> • BJC-PQ-1520, <i>Readiness Reviews for Radiological, Non-Nuclear and Other Industrial Facilities/Activities</i> • BJC-NS-1017, <i>Implementation Validation Review Process</i> • BJC-GM-515, <i>Facility Management</i> • Policy 401, <i>Managers of Projects</i> 	Exhibit E, Technical Specifications for Subcontractor Work Control Requirements; Readiness Review Interface and Nuclear Facility Maintenance Exhibit G, ES&H Exhibit I, Subcontractor Submittal Requirements Summary
The contractor shall, in performance of work, ensure that -Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. [P3]	Section 2, Establish Controls, page 16 Section 3, Subcontractor Accountability and Responsibility, page 31 Section 4, The Empowered Worker, page 24	<ul style="list-style-type: none"> • BJC-HR-0702 —<i>Training Program</i> • BJC-HR-0710, <i>Position Descriptions</i> • BJC-HR-0724, <i>Training and Qualification Program for BJC Category 2 and 3 Nuclear Facilities</i> • BJC-HR-0725, <i>BJC Training Implementation Matrix for Category 2 and 3 Nuclear Facilities</i> • BJC-PR-1207, <i>Prequalified Offerors/Prospective Source List</i> • BJC/OR-1088, <i>Bechtel Jacobs Nuclear and Radiological Facilities Qualification Standard.</i> 	Exhibit D, Scope of Work Exhibit E, Technical Specifications for Training

ISMS Element	ISMS Description Reference	BJC Document	Subcontractor Proforma
The contractor shall promptly evaluate and resolve any noncompliance with applicable ES&H requirements and the System. If the contractor fails to provide resolution or if, at any time, the contractor's acts or failure to act causes substantial harm or an imminent danger to the environment or health and safety of employees or the public, the contracting officer may issue an order stopping work in whole or in part. Any stop work order issued by a contracting officer under this clause (or issued by the contractor to a sub-contractor in accordance with paragraph (i.) of this clause) shall be without prejudice to any other legal or contractual right of the Government. In the event that the contracting officer issues a stop work order, an order authorizing the resumption of the work may be issued at the discretion of the contracting officer. The contractor shall not be entitled to an extension of time or additional fee or damages by reason of, or in connection with, any work stoppage ordered in accordance with this clause. [D-(g)]	Section 2, Suspend/Stop Work Authority, page 19	<ul style="list-style-type: none"> • BJC-EH-2018, <i>Suspension of Work(Safety Related)</i> • BJC-EH-2015, <i>Safety Concerns (I Care/We Care)</i> 	Exhibit B, Special Conditions Exhibit G, ES&H
Feedback/Improvement [F5]	Section 2, Identify Continuous Improvement Opportunities, pages 20-22 Section 7, ISM System Effectiveness pages 43-44	<ul style="list-style-type: none"> • BJC-PQ-1210, <i>Issues Management Program</i> • BJC-PQ-1240, <i>Lessons Learned Program</i> • BJC-PQ-1401, <i>Independent Assessment</i> • BJC-PQ-1420, <i>Management Assessment</i> • BJC-EH-2015, <i>Safety Concerns (I Care/We Care)</i> • BJC-GM-1001, <i>Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description</i> • Six Sigma Process 	Exhibit G, ES&H
The System shall describe how the contractor will establish, document, and implement safety performance objectives, performance measures, and commitments in response to DOE program and budget execution guidance while maintaining the integrity of the System. The System shall also describe how the contractor will measure System effectiveness. [D-(d)]	Section 2, Define Scope of Work, pages 13-14 Section 7, Maintaining and Improving ISMS, page 43-44	BJC/OR-162, <i>Life Cycle Baseline Update Guidance Document</i> BJC-GM-1001, <i>Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description</i>	Exhibit G, ES&H

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APPENDIX B
LISTING OF PROCEDURES AS IDENTIFIED IN THIS DOCUMENT

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The following is a listing of procedures referenced in Sections 1 through 7 of the ISMS Description. Additional procedures are included in Appendix C, Safety Management Program Matrix.

<i>Procedure Number</i>	<i>Procedure Title</i>
Administrative Services	
BJC/OR-60	<i>Requirements for Bechtel Jacobs Company LLC Documents</i>
BJC-OS-1001	<i>Records Management, Including Document Control</i>
Engineering	
EDPI-4.34-01	<i>Off-Project Design Review</i>
EDPI-4.37-01	<i>Project Calculations</i>
EDPI-4.46-01	<i>Project Drawings</i>
EDPI-4.49-01	<i>Project Specifications</i>
EDPI-4.62-01	<i>Field Change Request</i>
Environment, Safety and Health	
BJC-EH-2010	<i>Hazard Assessment</i>
BJC-EH-2015	<i>Safety Concerns (I Care/We Care)</i>
BJC-EH-3001	<i>Environmental Compliance and Protection Oversight Program Description</i>
BJC-FP-2001	<i>Fire Protection Program Description</i>
BJC/OR-301	<i>Radiation Protection Program for 10CFR 835 Occupational Radiation Protection</i>
BJC-EH-2018	<i>Suspension of Work (Safety Related)</i>
EH-5614	<i>Safety Advocate Program</i>
Field Services	
BJC-FS-1001	<i>Work Control Requirements</i>
BJC-FS-1010	<i>Subcontract Technical Representative (STR) Program Plan</i>
BJC-FS-1011	<i>Subcontract Technical Representative (STR) Requirements for Subcontract Formation</i>
BJC-FS-1012	<i>Subcontract Technical Representative (STR) Requirements for Subcontract Execution</i>
BJC-FS-1013	<i>Subcontract Technical Representative (STR) Requirements for Subcontract Closeout</i>
BJC-FS-1035	<i>Nuclear Facility Maintenance Program</i>
General Management	
BJC-GM-007	<i>Environmental Management</i>
BJC-GM-112	<i>Environment, Safety and Health</i>
BJC-GM-209	<i>Standards Review Board</i>
BJC-GM-213	<i>Closure Project Evaluation Board/ISMS Improvements</i>
BJC-GM-515	<i>Facility Management</i>
BJC-GM-1001	<i>Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description</i>
BJC-GM-1400	<i>Integrated Safety Management System Description</i>
BJC-GM-2000	<i>Conduct of Operations for Project, Facilities, and Activities</i>
BJC/OR-1112	<i>Hazard Categorization/Classification and Hazards Analysis Application Guide</i>
Policy 10	<i>Discipline and Rigor of Operations</i>
Policy 401	<i>Managers of Projects</i>
Human Resources	
BJC-HR-0202	<i>Employment Process</i>
BJC-HR-0702	<i>Training Program</i>
BJC-HR-0710	<i>Training Position Descriptions</i>
BJC-HR-0724	<i>Training and Qualification Program for BJC Category 2 and 3 Nuclear Facilities</i>
BJC-HR-0725	<i>BJC Training Implementation Matrix for Category 2 and 3 Nuclear Facilities</i>
BJC/OR-1088	<i>Bechtel Jacobs Nuclear and Radiological Facilities Qualification Standard</i>
Nuclear Safety	
BJC-NS-1001	<i>Unreviewed Safety Question Determinations For Nuclear Category 2 & 3 Facilities</i>
BJC-NS-1002	<i>Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities</i>

<i>Procedure Number</i>	<i>Procedure Title</i>
BJC-NS-1003	<i>Nuclear Criticality Safety Program</i>
BJC-NS-1008	<i>Unreviewed Change Determinations for Radiological and Non-Nuclear Facilities</i>
BJC-NS-1009	<i>Safety Documentation for Radiological and Non-Nuclear Facilities</i>
BJC-NS-1015	<i>Generation, Review, Approval, and Control of Authorization Agreements and Radioactive Waste Management Basis</i>
BJC-NS-1016	<i>Configuration Management Program for Nuclear and Non-Nuclear Facilities</i>
Project Controls	
BJC/OR-162	<i>Life Cycle Baseline Update Guidance Document.</i>
BJC-PC-1001	<i>System Description (for Project Controls)</i>
BJC-PC-1004	<i>Baseline Management and Change Control</i>
Procurement/Property	
BJC-PR-1002	<i>Processing Proforma Documents</i>
BJC-PR-1009	<i>Prime Contract Requirements</i>
BJC-PR-1207	<i>Prequalified Offerors/Prospective Source List</i>
BJC-PR-1403	<i>Receipt and Evaluation of Proposals</i>
BJC-PR-1401	<i>Appointment of Formation Teams</i>
BJC-PR-1407	<i>Formation, Processing and Control of RFPs</i>
PR-3303	<i>Construction Subcontracts/Davis Bacon</i>
PR-3404	<i>Subcontract/Purchase Order Administration</i>
PR-3406	<i>Modification Process</i>
Performance/Quality Assurance	
BJC/OR-43	<i>Bechtel Jacobs Company LLC Quality Assurance Program Plan for Environmental Management and Enrichment Facilities at Oak Ridge, TN, Portsmouth, Ohio, and Paducah, Kentucky</i>
BJC-PQ-1107	<i>Performance Document Process</i>
BJC-PQ-1150	<i>Standards Management</i>
BJC-PQ-1170	<i>Control of Subject Matter Area Designations and Subject Matter Expert Assignments</i>
BJC-PQ-1210	<i>Issues Management Program</i>
BJC-PQ-1230	<i>Root Cause Analysis</i>
BJC-PQ-1240	<i>Lessons Learned Program</i>
BJC-PQ-1401	<i>Independent Assessment</i>
BJC-PQ-1420	<i>Management Assessment</i>
BJC-PQ-1460	<i>Event Investigations and Critiques</i>
BJC-PQ-1510	<i>Readiness Review for Nuclear Category 2 & 3 Facilities/activities</i>
BJC-PQ-1520	<i>Readiness Reviews for Radiological, Non-Nuclear and other Industrial Facilities/activities</i>
PQ-A-1060	<i>Design</i>

APPENDIX C
SAFETY MANAGEMENT PROGRAM MATRIX

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Appendix C

Safety Management Program Matrix

This Appendix provides a crosswalk of BJC Subject Matter Areas (SMA) to the associated Safety Management Programs (SMP) required for 10CFR830, Subpart B, Safety Basis and the related standard DOE-STD-3009, Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses. The matrix identifies:

- the DOE-STD-3009 chapter, the related BJC SMA, and the responsible Functional Organization
- the applicable key upper tier requirements from the BJC Prime Contract and Work Smart Standards,
- the governing BJC Program Documentation (program descriptions and associated Company level implementing procedures),
- the BJC subcontract proforma and subcontractor submittal requirements that govern flowdown of these programs to BJC subcontractors, and
- BJC assurance and programmatic assessment elements in place to assure the effective implementation of these programs in the field.

The SMP Matrix is provided as a tool to demonstrate adequacy of program definition and to support effective implementation at the facility level as a part of the Documented Safety Analyses (DSAs) developed in accordance with 10CFR830, Subpart B.

Negotiated regulatory agreements and plans are considered a part of specific project work scope for execution and are not included in the SMP Matrix as key upper-tier requirements. The SMP Matrix includes key upper-tier requirements that are programmatic in nature but does not include all standards and requirements that are used to govern safety within BJC. While the SMP Matrix is intended to identify only those standards and requirements supporting the DOE-STD-3009 defined SMPs, the full set of BJC safety standards and requirements are defined by the combination of BJC Prime Contract clauses, Prime Contract Section I - Appendix E, the Work Smart Standards sets, and the Standards and Requirements Identification Documents. Subject Matter Experts (SMEs) are accountable for implementation of the full set of BJC safety standards and requirements.

Safety Management Program Matrix

Index Mapping DOE-STD-3009 Safety Management Programs (SMP) vs. BJC Subject Matter Areas (SMA)

DOE-STD-3009 SMP Chapters	Related BJC Subject Matter Areas
06 – Prevention of Inadvertent Criticality	Criticality Safety
07 – Radiation Protection	Radiation Controls / Health Physics
08 – Hazardous Material Protection	Industrial Hygiene
09 – Radioactive and Hazardous Waste Management	Waste Management
	Environmental Compliance (Hazardous Waste Management)
	Packaging and Transportation
10 – Initial Testing, In-Service Inspection, and Maintenance	Maintenance
11 – Operational Safety	Fire Protection/Life Safety
	Conduct of Operations
12 – Procedures and Training	Procedures
	Training
13 – Human Factors	Engineering Management
14 – Quality Assurance	Quality Assurance
	Document Control & Records Management
	Issues Management
15 – Emergency Preparedness	Emergency Management
16 – Provisions for D&D	Engineering Management
17 – Management, Organization, and Institutional Safety	Integrated Safety Management
	Occupational Safety
	Assessments
	Readiness Assessment
	Nuclear Safety Documentation, Configuration Management, & USQD Process
	Occurrence Reporting and Lessons Learned

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
06 – Prevention of Inadvertent Criticality Criticality Safety Nuclear Facility Safety	<ul style="list-style-type: none"> 10CFR830 Subpart B DOE O 420.1A, <i>Facility Safety</i> (per DOE approved Implementation Plan) IG - ANSI/ANS-8.22, <i>Nuclear Criticality Safety Based On Limiting and Controlling Moderators</i> IG – ANSI/ANS-10.4, <i>Guidelines for the Verification and Validation of Science and Engineering Computer Programs for the Nuclear Industry</i> IG – DOE-STD-3007, <i>Guidelines for Preparing Criticality Safety Evaluations at Department of Energy Non-Reactor Nuclear Facilities</i> 	<ul style="list-style-type: none"> BJC-NS-1003, Nuclear Criticality Safety Program BJC-NS-1005, Nuclear Criticality Safety Evaluations and Calculations BJC-GM-012, <i>Nuclear Criticality Safety</i> BJC-GM-013, <i>Nuclear Safety Assurance</i> BJC-GM-208, <i>Nuclear Criticality Safety Review Committee</i> BJC-NS-1004, <i>Radiation Criticality Accident Alarm System</i> 	<p>Proforma:</p> <ul style="list-style-type: none"> Exhibit G, Appendix G-3, ES&H Crosswalk Exhibit E, SPG-000000-A0002, Technical Specification for Nuclear and Facility Safety <hr/> <p>Exhibit L Procedures Flowdown:</p> <ul style="list-style-type: none"> BJC-GM-012, <i>Nuclear Criticality Safety</i> BJC-NS-1003, <i>Nuclear Criticality Safety Program</i> BJC-NS-1004, <i>Radiation Criticality Accident Alarm System</i> (where applicable) BJC-NS-1005, <i>Nuclear Criticality Safety Evaluations and Calculations</i> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> Software QA Verification Exhibit G, Appendix G-3, ES&H Crosswalk Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk 	<ul style="list-style-type: none"> Triennial External Program Assessment Initial External Independent Program Assessment (ATL) NFS Management Assessments in accordance with BJC-NS-1003, <i>Nuclear Criticality Safety Program</i> NCS Surveillances Performance Metrics BJC-GM-208, <i>Nuclear Criticality Safety Review Committee</i> The subject matter expert completed a baseline assessment of the Criticality Safety subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
07 – Radiation Protection Radiation Controls / Health Physics Environment, Safety & Health	<ul style="list-style-type: none"> 10CFR830 Subpart A 10CFR835 29CFR1910 29CFR1926 ANSI N323-1978, <i>Radiation Protection Instrumentation Test and Calibration</i> DOE Order 5400.5, Chg. 2, <i>Radiation Protection of the Public and the Environment</i> DOE P 441.1, <i>Radiological Protection for DOE Activities</i> 	<ul style="list-style-type: none"> BJC/OR-301, Radiation Protection Program for 10 CFR 835 Occupational Radiation Protection (DOE approved) Certificate of Accreditation, United States Department of Energy Laboratory Accreditation Program for Radiobioassay Laboratories, East Tennessee Technology Park (for operations performed by Bechtel Jacobs at applicable EM sites), July 24, 2002 BJC-EH-1011, <i>Radiological Site Access Requirements and Site Access Cards</i> BJC-EH-4001, <i>ALARA Program</i> BJC-EH-4006, <i>Embryo/Fetus Protections</i> BJC-EH-4018, <i>Design and Control</i> BJC-EH-4020, <i>Radioactive Source Control</i> BJC-EH-4023, <i>Selection and Use of Personal Protective Apparel for Radioactive Contamination Control</i> BJC-EH-4024, <i>Radiation-Generating Devices</i> BJC-EH-4030, <i>Radiological Area Entry Control</i> BJC-EH-4035, <i>Radiation Safety Training</i> BJC/OR-540, <i>Technical Basis for the Air Monitoring Program</i> 	<p>All subcontractor work is in accordance with the BJC Radiation Protection Program</p> <p>Proforma:</p> <ul style="list-style-type: none"> Exhibit B, Special Condition – Possibility of Contamination of Subcontractor-Owned Materials and Equipment Exhibit B, Special Condition – Quality Assurance Exhibit B, Special Condition – Training Exhibit G, Part I, 3.7, Site Access Exhibit G, Part II, 2.1, Radiation Protection Exhibit G, Appendix G-3, ES&H Crosswalk <hr/> <p>Exhibit L Procedures Flowdown:</p> <ul style="list-style-type: none"> BJC-EH-1011, <i>Radiological Site Access Requirements and Site Access Cards</i> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> ES&H Plan Exhibit G, Appendix G-3, ES&H Crosswalk Exhibit G, Appendix G-4, Training/Medical Surveillance Certification Exhibit G, Appendix G-5, Activity Hazard Assessment 	<ul style="list-style-type: none"> The subject matter expert completed a baseline assessment of the Radiation Protection subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. Internal audits are performed on all functional elements of the RADCON Program on a frequency no less than every 36 months. DOELAP Assessments are performed for the external and internal dosimetry programs every two years. Formal ES&H Management Assessments are performed as part of the Integrated Assessment Program. Project Health Physicists and RADCON Subcontractor Site Managers perform monthly project walk-downs – where results are collated, tracked, and trended. Senior RADCON staff review trend results on a monthly basis. Dosimetry Data Review Meetings are conducted where Project Health Physicists review quarterly dosimetry data and lessons learned. ALARA Subcommittee of the Zero Accident

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3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
		<ul style="list-style-type: none"> EH-4501, <i>Internal Dosimetry Technical Basis Document for Bechtel Jacobs Company, LLC</i> BJC/OR-801, <i>Internal Dosimetry Program Quality Assurance Program</i> EH-4500, <i>Radiological Control Operations Guide for the Environmental Management and Enrichment Facilities at Oak Ridge, Tennessee, Portsmouth, Ohio, and Paducah Kentucky</i> EH-4506, <i>RADCON Internal Audit Program</i> EH-4507, <i>Radiation Exposure Limits</i> EH, 4508, <i>Planned Special Exposures</i> EH-4511, <i>External Dosimetry</i> EH-4512, <i>Internal Dosimetry</i> EH-4513, <i>Workplace Monitoring</i> EH-4514, <i>Workplace Air Monitoring for Radioactivity</i> EH-4515, <i>Radiation Surveys</i> EH-4516, <i>Radioactive Contamination Control and Monitoring</i> EH-4517, <i>Posting and Labeling</i> EH-4518 <i>Radiation Protection Program Records</i> EH-4519, <i>Reports to Individuals</i> EH-4521, <i>Accidents and Emergencies</i> EH-4527, <i>Receipt, Transport, and Movement of Radioactive Materials</i> 	<ul style="list-style-type: none"> Exhibit G, Appendix G-7, Previous Occupational Radiological Exposure Form Exhibit G, Appendix G-11, Pregnancy Declaration Exhibit G, Appendix G-12, Withdrawing a Pregnancy Declaration Exhibit G, Appendix G-13, Radioactive Check/Calibration Source Sign-Out Sheet Exhibit G, Appendix G-14, Anti-Contamination Clothing Guideline Exhibit G, Appendix G-15, Minimum Access Requirements Exhibit G, Appendix G-16, Statement of Proof of DOE Core Radiological Worker Training Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk 	<ul style="list-style-type: none"> Council review company ALARA performance. RADCON Subcontractor performance is evaluated on a monthly basis using a detailed scorecard method. RADCON Program operations is subcontracted to a single independent subcontractor to ensure program consistency and compliance. Concept ensures no conflict of interest by remediation subcontractors in satisfying RADCON Program requirements Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
08 – Hazardous Material Protection Industrial Hygiene Environment, Safety & Health	<ul style="list-style-type: none"> 10 CFR 850, <i>Beryllium Rule</i> 29CFR1910 29CFR1926 ACGIH, American Conference of Governmental Industrial Hygienists - Threshold Limit Values ANSI Z 136.1 (1993), <i>Safe Use of Lasers</i> ANSI Z 49.1, <i>Safety in Welding, Cutting, and Allied Processes</i> ANSI Z117.1, <i>Safety Requirements for Confined Spaces</i> ANSI/ASHRAE 62-1989, <i>Ventilation</i> DOE O 440.1A, <i>Worker Protection Management for DOE Federal and Contractor Employees</i> Chemical Safety Management Program – developed in accordance with requirements established in letter from R. C. Sleeman (COR) to J. W. Thiesing (BJC VP & DGM) dated 12/23/1999. 	<ul style="list-style-type: none"> BJC-EH-5187, Chemical Safety Management Program Description BJC-GM-1400, ISMS Description (submitted for DOE approval) BJC-EH-2010, <i>Hazard Assessment</i> EH-5558, <i>Industrial Hygiene Measuring and Test Equipment Calibration Program</i> EH-5560, <i>Workplace Industrial Hygiene Sampling</i> EH-5615, <i>ES&H Staff Roles and Responsibilities/Training Position</i> SH-A-5101 <i>Reproductive Health Protection</i> SH-A-5110, <i>Biological Monitoring for Industrial Chemicals</i> SH-A-5121, <i>Occupational Noise Exposure and Hearing Conservation Program</i> SH-A-5133, <i>Ergonomics Program</i> SH-A-5134, <i>Temperature Extremes</i> SH-A-5135, <i>Bloodborne Pathogens Program</i> SH-A-5138, <i>Confined Space Program Description</i> SH-A-5140, <i>Hazard Communications</i> 	Proforma: <ul style="list-style-type: none"> Exhibit G Part II Section 2.2, Special Requirements For Entry Into Confined Spaces Exhibit G, Part II, Section 2.3, Hearing Conservation Program Exhibit G, Part II, Section 2.4, Man-Made Mineral Fibers Exhibit G, Part II, Section 2.5, Requirements For Asbestos Operations Exhibit G, Part II, Section 2.6, Hazard Communication Program Exhibit G, Part II, Section 2.7, Dust (Particulate) Control Requirements Exhibit G, Part II, Section 2.8, Extreme Temperature Requirements Exhibit G, Part II, Section 2.9, Vacuum Cleaners And Portable Air-Handling Equipment Exhibit G, Part II, Section 2.11, Inorganic Arsenic and Lead Operations Written Compliance Program Exhibit G, Part II, Section 2.12, Cadmium 	<ul style="list-style-type: none"> ES&H Subcontractor Oversight & Management Assessment Plan as implemented by: BJC-PQ-1420, ES&H Subcontractor Prequalification Process Project ES&H representatives provide routine daily oversight and assistance. Periodic subject matter area assessments as required by BJC Procedures: Biological Monitoring for Industrial Chemicals Hazardous Chemicals in Laboratories Temperature Extremes Bloodborne Pathogens Confined Space Entry Hazard Communication Respiratory Protection Hazardous Waste Operations & Emergency Response Chronic Beryllium Disease Chemical Safety Management The subject matter expert completed a baseline assessment of the Industrial Hygiene subject matter area. This assessment verified the adequacy of contractual requirements and

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3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
		<ul style="list-style-type: none"> • SH-A-5151, <i>Respiratory Protection Program</i> • SH-A-5161, <i>Hazardous Waste Operations and Emergency Response</i> • SH-A-5172, <i>Indoor Air Quality</i> • SH-A-5177, <i>Asbestos and Other Fibrous Materials</i> • SH-A-5181, <i>Hazardous Materials Information System</i> • SH-A-5616, <i>Industrial Ventilation-Laboratory Hoods</i> • SH-A-5629, <i>Chronic Beryllium Disease Prevention Program</i> • SH-A-8153, <i>Occupational Health Program</i> 	<p>Written Compliance Program</p> <ul style="list-style-type: none"> • Exhibit G, Part II, Section 2.13, Beryllium Written Compliance Program • Exhibit G, Part II, Section 3.2, Respirator Usage • Exhibit G, Part II, Section 4.1.5, Subcontractor Posting of Monitoring Results • Exhibit G, Part II, Section 7. Medical Surveillance Program • Exhibit G, Appendix G-3, ES&H Crosswalk <p>Exhibit L Procedures Flowdown:</p> <ul style="list-style-type: none"> • BJC-EH-5138, <i>Confined Space Program</i> • BJC-EH-5177, <i>Asbestos and Other Fibrous Materials</i> • SH-A-5629, <i>Chronic Beryllium Disease Prevention Program</i> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk • Subcontractor ES&H Plan • ES&H Representative Qualifications • Initial Activity Hazard Assessments • Confined Space Program Responsibilities • Asbestos Work Plan • Asbestos Negative Exposure Assessments • Material Safety Data Sheets & Initial Inventory Information • Hazardous materials Inventory • Documentation of Exposure Evaluations • Inorganic Lead and / or Arsenic Compliance Program • Cadmium Compliance Program • Beryllium Compliance Program 	<p>established programmatic flowdown.</p> <ul style="list-style-type: none"> • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
<p>09 – Radioactive and Hazardous Waste Management</p> <p>Waste Management</p> <p>Waste Generator Services</p>	<ul style="list-style-type: none"> DOE O 435.1, <i>Radioactive Waste Management</i> (per WSS and DOE approved Implementation Plan) DOE M 435.1, <i>Radioactive Waste Management</i> (per WSS) 	<ul style="list-style-type: none"> BJC-GM-124, Waste Generator Services BJC/OR-43, <i>Bechtel Jacobs Company LLC Quality Assurance Program Plan for Environmental Management and Enrichment Facilities at Oak Ridge, Tennessee, Portsmouth, Ohio and Paducah, Kentucky</i> <p>Strategic Planning (Life Cycle, Disposition Mapping):</p> <ul style="list-style-type: none"> Life Cycle Baseline DOE/OR/01-2045D, <i>Comprehensive Waste Disposition Plan</i> Waste Disposition Maps <p>Authorization Basis (Facility Safety Authorization Basis):</p> <ul style="list-style-type: none"> BJC-NS-1015, <i>Generation, Review, Approval and Control of Authorization Agreements and Radioactive Waste Management Basis</i> Authorization Agreement/Radioactive Waste Management Basis for facilities. <p>Characterization/Certification Documentation for Offsite Disposal:</p> <p>Oak Ridge</p> <ul style="list-style-type: none"> BJC/OR-57, <i>Oak Ridge Reservation Waste Certification Program Plan</i> WM-A-2001, <i>Generator Requirements for Transferring Waste; and the applicable Master Waste Profile</i> (Master Profile). BJC/OR-701, <i>Profiling and Qualifying Low-Level Waste Streams for Disposal at the Nevada Test Site.</i> BJC/OR-733, <i>Sampling and Analysis Plan for Containerized Wastes on the Oak Ridge Reservation, Oak Ridge, Tennessee</i> BJC/OR-734, <i>Waste Disposition's Characterization Plan on the Oak Ridge Reservation, Oak Ridge, Tennessee</i> BJC/OR-737, <i>Low Level Waste Quality Assurance Project Plan, Oak Ridge, Tennessee</i> BJC/OR-1207, <i>Radiological Characterization Guidance for Solid Wastes</i> BJC-WM-2010, <i>Procurement and Inspection of Items Critical to the Oak Ridge Reservation Waste Certification Program</i> BJC-WM-2013, <i>Certification of Low-Level Waste for Disposal at the Nevada Test Site</i> 	<p>Proforma:</p> <ul style="list-style-type: none"> Exhibit G, Appendix G-3, ES&H Crosswalk Exhibit E, SPG-000000-0006, Technical Specification for Waste Management <hr/> <p>Exhibit L Procedures Flowdown:</p> <p>For ORR generators, BJC-WM-2001 and BJC-WM-2013 are mandatory procedures identified in Exhibit L.</p> <p>The Waste Certification Programs at the 3 sites are invoked through Technical Specifications, which requires subcontractors to comply with program requirements for waste transferred to BJC (WESKEM or WASTREN) for storage or disposal. Subcontractors are required to develop their own procedure for waste shipped for direct disposal.</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> Waste Management Plan Exhibit G, Appendix G-3, ES&H Crosswalk Report of all waste generated through site-specific tracking system Weekly off-site shipments (including manifest, bill of lading, shipping list, weight and volume) Staging/Storage area registration BJCF 479 to support development of Radioactive Waste Management Basis Notification of WCO for non-conformances, findings, or observations from independent and management assessments that could affect waste certification Design specifications for all non-standard containers (i.e., containers other than DOT spec packaging or off-the-shelf non-bulk performance oriented packaging) Requests to store LLW past one year 	<ul style="list-style-type: none"> For shipments destined for NTS, a BJC WCO is required to provide final certification of the waste. Subcontractors involved in the NTS certification process are required to meet minimum training requirements. For all waste transferred into a BJC managed storage facility at ORR, waste meets the requirements of a Master Profile (does not apply to pre-existing waste transferred between facilities). WGS has deployed WM technical support and Transportation Advocates to each project to provide guidance and oversight. The WCO is responsible to maintain a continuous surveillance program for NTS certification. The WM programs are routinely assessed internally and externally (Management Assessments, Independent Assessments, ES&H Assessments, DOE EM Assessment Program, etc.) The subject matter expert completed a baseline assessment of the Waste Management subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
		<p>Paducah</p> <ul style="list-style-type: none"> • BJC/PAD-11, <i>Waste Acceptance Criteria for the DOE TSD Units at Paducah</i> • Gaseous Diffusion Plant • BJC/PAD-284, <i>Integrated Waste Management Plan for the Paducah Gaseous Diffusion Plant</i> • PA-3013, <i>Off-Site Shipment Management Review Process at Paducah</i> • BJC/PAD-215, <i>Profiling and Qualifying Low-Level Waste Streams from Paducah for Disposal at the Nevada Test Site</i> • BJC/PAD-437, <i>Waste Disposition's Characterization Plan on the Paducah Gaseous Diffusion Plant Paducah, Kentucky</i> • PA-3011, <i>Certification of Paducah Low-Level Waste for Disposal at the Nevada Test Site</i> • PA-3012, <i>Procurement and Inspection of Items Critical to the Paducah NTS Waste Certification Program</i> <p>Portsmouth</p> <ul style="list-style-type: none"> • BJC/PORTS-432 <i>Profiling and Qualification of Low-Level Waste Streams for Disposal at the Nevada Test Site from the Portsmouth Gaseous Diffusion Plant Piketon, Ohio</i> • BJC/PORTS-433 <i>Sampling Analysis and Quality Assurance Plan for Low-Level Waste for Disposal at the Nevada Test Site from the Portsmouth Gaseous Diffusion Plant Piketon, Ohio</i> 		

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09 – Radioactive and Hazardous Waste Management Environmental Compliance Environment, Safety & Health (Note: Environmental Compliance has subject matter responsibility for regulations pertaining to management of hazardous waste.)	<ul style="list-style-type: none"> • DOE Order 5400.1, Change 1, <i>General Environmental Protection Program</i> • DOE Order 5400.5, Change 2, <i>Radiation Protection of the Public and the Environment</i> • DOE M 231.1-1, <i>Environment, Safety, and Health Reporting</i>, Chapter I, Section I • Clean Air Act (CAA) • Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) • Clean Water Act (CWA) • National Environmental Policy Act (NEPA) • Resource Conservation and Recovery Act (RCRA) • Toxic Substances Control Act (TSCA) • Federal and TN, KY, & OH State regulations 	<ul style="list-style-type: none"> • BJC-GM-007, <i>Environmental Management</i> • BJC-EH-3015, <i>Resource Conservation and Recovery Act (RCRA) Hazardous, Radioactive, Mixed and Solid Waste Management Program Description</i> • BJC-EH-3030, <i>TSCA and PCB Program Description</i> • BJC-EH-3001, <i>Environmental Compliance (EC) Oversight Program Description</i> • BJC-EH-3005, <i>NHPA Program Description</i> • BJC-EH-3010, <i>NEPA Program Description</i> • BJC-EH-3025, <i>Clean Air Act (CAA) Compliance Program Description</i> • BJC-EH-3040, <i>Underground Storage Tank (UST) Program Description</i> • BJC-EH-3090, <i>CWA Compliance Program Description</i> • BJC-EH-3120, <i>Environmental Monitoring Program Description</i> • EC-A-6025 <i>BJC Clean Air Act Compliance Program Description</i> • Environmental Compliance Review Checklist BJCF-539 • EH-5615 <i>ES&H Staff Roles and Responsibilities/Training Position</i> • Directive 101, <i>Evaluations of Commercial TSDRFS</i> 	Proforma: <ul style="list-style-type: none"> • Exhibit A, General Condition – Laws, Regulations, and DOE Directives • Exhibit G, Part II, Section 5.5, Waste Characterization and Management • Exhibit G, Part II, Section 5.6, Pollution Prevention • Exhibit G, Part II, Section 5.8.3, Hazardous and Solid Waste Amendments Permit • Exhibit G, Part II, Section 5.9.1, RCRA Annual Report • Exhibit G, Part II, Section 5.9.3, TSCA Annual Report • Exhibit G, Part II, Section 5.9.4, EPCRA 311/312 Reports • Exhibit G, Part II, Section 5.9.5, EPCRA 313 Report • Exhibit G, Part II, Section 5.9.9, Radionuclide NESHAP Annual Report • Exhibit G, Part II, Section 5.9.11, Asbestos Annual Inventory Report • Exhibit G, Part II, Section 5.9.13, Inventory of Federal Agency Hazardous Waste Activities (RCRA 3016 Report). • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit G, Appendix G-9, Bechtel Jacobs NEPA Project Review Checklist 	<ul style="list-style-type: none"> • ES&H Subcontractor Oversight & Management Assessment Plan as implemented by: BJC-PQ-1420, <i>Management Assessment</i> • ES&H Subcontractor Prequalification Process • EPA and State external regulatory assessments (TN and KY Oversight Agreements; typically several assessments each year) • Project ES&H representatives provide routine daily oversight and assistance. • The subject matter expert completed a baseline assessment of the Environmental Compliance subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • Environmental compliance metrics. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
			Exhibit L Procedures Flowdown: NA	
			Subcontractor Submittals: <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk • Subcontractor ES&H Plan • TSDRF evaluation reports (and annual updates) • ES&H Representative Qualifications • Initial Activity Hazard Assessments • Environmental Compliance Plan • NEPA Checklist • NEPA Documentation • NESHAP Asbestos Reporting • Notification of SAA's, 90-day AA's, etc. • Pollution Prevention Reporting • Regulatory Notifications, Permit Applications & Permit Modifications • Discharge Monitoring Report Data • NPDES Sampling & Analysis Plan • Reporting Under HSWA Permit 	

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			<ul style="list-style-type: none"> • Notification of Regulatory Visits • Documentation of Contacts with Regulatory Agencies • Environmental Permit Fees • Modification to Liquid Treatment Facilities • Input to RCRA Annual Report • Input to TSCA Annual Report • Input to EPCRA Section 311/312 Reports • Input to EPCRA Section 313 Report • Input to Annual Site Environmental Report • Quarterly Environmental Monitoring Report (ETTP) • Input to Annual Air Emissions Fee Analysis • Input to Radionuclide NESHAP Annual Report • OREIS Data • Input to Asbestos Annual Inventory Report • Input to Federal Facilities Environmental Compliance Profiles • Input to Inventory of Federal Agency Hazardous Waste Activities (RCRA 3016 Report) 	
<p>09 – Radioactive and Hazardous Waste Management</p> <p>Packaging and Transportation</p> <p>Waste Generator Services</p>	<ul style="list-style-type: none"> • 10 CFR 71, <i>Packaging and Transportation of Radioactive Material</i> • 14 CFR 77, <i>Objects Affecting Navigable Airspace</i> • 14 CFR 91, <i>General Operating and Flight Rules</i> • 14 CFR 135, <i>Operating Requirements: Commuter and On-Demand Operations</i> • 40 CFR 262, Subparts B and C, and 263, <i>Hazardous Waste Management</i> • 40 CFR 761, <i>PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions</i> (sections applicable to transportation only) • 49 CFR 100 - 199, <i>U.S. DOT Hazardous Materials Regulations</i> • 49 CFR 325 - 399, <i>U.S. Department of Transportation (DOT) Federal Motor Carrier Safety Regulations</i> • 49 CFR 830, <i>Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, & Preservation of Aircraft Wreckage, Mail, Cargo, and Records</i> 	<ul style="list-style-type: none"> • TSD-MS-BJC-0001, <i>Bechtel Jacobs Company Transportation Safety Document for the On-site Transport of Hazardous Material, at the Oak Ridge Reservation Oak Ridge, Tennessee</i> • Equivalent TSD for Portsmouth and Paducah Projects (in development) • BJC-TR-9510, <i>Transportation Oversight of Bechtel Jacobs Company Subcontractors</i> • BJC-TR-9501, <i>Loading and Securing Methods for the Transport of Hazardous Materials</i> • BJC-TR-9502, <i>Guidelines for Motor Carriers</i> • BJC-TR-9503, <i>Shipping Samples from a Bechtel Jacobs Site</i> • BJC-TR-9504, <i>Placarding Requirements for the Transportation of Hazardous Materials</i> • BJC-TR-9505, <i>Labeling Requirements for the transportation of Hazardous Materials</i> • BJC-TR-9506, <i>Marking Requirements for the Transportation of Hazardous Materials</i> • BJC-TR-9507, <i>Shipping Paper Requirements</i> • BJC-TR-9508, <i>Classification of Hazardous Materials for Transport</i> • BJC-TR-9509, <i>Packaging Hazardous Materials for Transport</i> • BJC-TR-9510, <i>Transportation Oversight of Bechtel Jacobs Company Subcontractors</i> 	<p>Proforma:</p> <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit E, SPG-000000-0002, Technical Specification for Transportation • Exhibit E, SPG-000000-0003, Technical Specification for Aviation Safety <hr/> <p>Exhibit L Procedures Flowdown:</p> <p>NA</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk • Transportation Plan • Shipping Documents • Shipping Schedule • Transporter Selection • Listing of Qualified Personnel • Notification of Radioactive Material (RAM) Shipments 	<ul style="list-style-type: none"> • For self-performed shipments, a BJC transportation specialist is required to review and approve shipping documents. • Subcontractors involved in the transportation process are required to meet minimum training requirements. • Waste Generator Services has deployed Transportation Advocates to each project to provide guidance and oversight. • Transportation Advocates are responsible to maintain a continuous surveillance of subcontractor shipping programs. • The Transportation programs are routinely assessed internally and externally (Management Assessments, Independent Assessments, ES&H Assessments, DOE EM Assessment Program, etc.) • The subject matter expert completed a baseline assessment of the Packaging and Transportation subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flow down.

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
	<ul style="list-style-type: none"> DOE O 460.1A, <i>Packaging and Transportation Safety</i> DOE O 460.2, <i>Departmental Materials Transportation and Packaging Management</i> 	<ul style="list-style-type: none"> BJC-TR-9512, <i>Motor Carrier Safety Compliance</i> BJC-TR-9001, <i>Aviation Safety</i> 		<ul style="list-style-type: none"> Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
10 – Initial Testing, In-Service Inspection, and Maintenance Maintenance Field Services	<ul style="list-style-type: none"> DOE O 430.1A, <i>Life Cycle Asset Management</i> DOE O 433.1, <i>Maintenance Management Program for DOE Nuclear Facilities</i> (per DOE approved Implementation Plan) DOE O 420.1A, <i>Facility Safety</i>, Section 4.5, <i>Systems Engineering Program</i> (per BJC submitted Implementation Plan) 	<ul style="list-style-type: none"> BJC/OR-43, Bechtel Jacobs Company LLC Quality Assurance Program Plan (DOE approved) BJC-FS-1035, Maintenance Management Program BJC/OR-1281, <i>System Engineer Program Description for Bechtel Jacobs Company</i> BJC-FS-1001, <i>Work Control Requirements</i> BJC-PQ-1510, <i>Readiness Reviews for Hazard Category 2 and 3 Nuclear Facilities/Activities</i> BJC-PQ-1020, <i>Control and Calibration of Measuring and Test Equipment</i> BJC-PQ-1080, <i>Inspection and Test Control</i> 	<p>Proforma:</p> <ul style="list-style-type: none"> Exhibit B, Specials Conditions – Quality Assurance Exhibit G, Appendix G-3, ES&H Crosswalk Exhibit E, SPG-000000-FS01, Technical Specification for Nuclear Facility Maintenance Requirements Exhibit E, SPG-000000-0004, Technical Specification for Readiness Review Interface <hr/> <p>Exhibit L Procedures Flowdown: NA</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> Exhibit G, Appendix G-3, ES&H Crosswalk Project Specific Quality Assurance Plan Maintenance Organization Chart Maintenance Organization Roles and Responsibilities Maintenance Procedures Work Control Procedures (Work Package Control, Configuration Management, Maintenance Prioritization) Maintenance Training Program 	<ul style="list-style-type: none"> The subject matter expert completed a baseline assessment of the Maintenance subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. SME Program Assessments SME Project Level Program Assessments (Matrices) Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
11 – Operational Safety Fire Protection/ Life Safety Environment, Safety & Health	<ul style="list-style-type: none"> • 29CFR1910 • 29CFR1926 • DOE O 420.1A, <i>Facility Safety</i>, Section 4.2 (per DOE approved Implementation Plan) • DOE O 440.1A, <i>Worker Protection Management for DOE Federal and Contractor Employees</i> • NFPA 1, <i>Fire Prevention Code</i> • NFPA 801, <i>Facilities Handling Radioactive Materials</i> • NFPA 30, <i>Flammable and Combustible Liquids Code</i> • NFPA 55, <i>Standard for the Storage, Use, and Handling of Compressed and Liquid</i> • Gases in Portable Cylinders • NFPA 51B, <i>Fire Prevention in Use of Cutting and Welding Processes</i> 	<ul style="list-style-type: none"> • BJC-GM-014, <i>Fire Protection</i> • BJC-FP-2001, <i>Fire Protection Program Description</i> • BJC-FP-2002, <i>Fire Evacuation Alarms and Good Housekeeping Practices</i> • BJC-FP-2003, <i>Fire Extinguisher Inspection and Maintenance</i> • BJC-FP-2004, <i>Fire Hazards Analysis</i> • BJC-FP-2005, <i>Fire Protection Engineering Assessment Procedure</i> • BJC/OR-1108/R-1, <i>Fire Hazard Analysis Application Guide</i> • BJC-EH-2007, <i>Welding/Burning/Hotwork</i> 	<p>Proforma:</p> <ul style="list-style-type: none"> • Exhibit E, SPG-000000-A0002, Technical Specification for Nuclear and Facility Safety • Exhibit G, Part II, Section 6.2, Housekeeping • Exhibit G, Part II, Section 6.5, Illumination • Exhibit G, Part II, Section 6.9, Fire Protection and Prevention • Exhibit G, Part II, Section 6.10, Fuel Storage Tanks • Exhibit G, Part II, Section 6.15, Electrical • Exhibit G, Part II, Section 6.22, Demolition • Exhibit G, Part II, Section 10.4 Fires (Protocol) • Exhibit G, Appendix G-3, ES&H Crosswalk <p>Exhibit L Procedures Flowdown:</p> <ul style="list-style-type: none"> • BJC-EH-2007, <i>Welding/Burning/Hotwork</i> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk 	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Fire Protection/ Life Safety subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Project Fire Protection leads at each site perform monthly assessments. • Safety Advocate surveillance of subcontractor activities. • FHAs and PHAs are reviewed annually. • FPEAs reviewed per DOE specified frequency. • Fire Department facility walkdowns to ensure facility, extinguisher, sprinklers, etc. • Facility level pre-fire plans. • At ETPP, BJC provides self-performed Fire Protection support. At other sites, Fire Protection support is provided by site landlord through MOU/work authorization/site use agreements. MOUs address inter-company roles and agreements regarding operability testing of fire main and fire sprinkler systems and for fire department support services. • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
11 – Operational Safety Conduct of Operations Field Services	<ul style="list-style-type: none"> • DOE Order 5480.19, Change 2, <i>Conduct of Operations Requirements for DOE Facilities</i> (per DOE approved Implementation Plan) 	<ul style="list-style-type: none"> • BJC-GM-10, <i>Discipline and Rigor of Operations</i> • BJC-GM-2000, <i>Conduct of Operations for Facilities, Projects, and Activities</i> • BJC-GM-515, <i>Facility Manager</i> • Conduct of Operations Matrixes (DOE approved) 	<p>Proforma:</p> <ul style="list-style-type: none"> • Exhibit D, Scope of Work • Exhibit E, SPG-000000-0005, Technical Specification for Conduct of Operations for Projects, Facilities, and Activities • Exhibit G, Appendix G-3, ES&H Crosswalk <p>Exhibit L Procedures Flowdown:</p> <p>NA</p> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk 	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Conduct of Operations subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Requirements are implemented via project and subcontractor procedures identified on the BJC and DOE approved Conduct of Operations Matrix • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments] • Implementation verification assessment of Conduct of Operations has been completed (November 2002).

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
12 – Procedures and Training Procedures Performance/Quality Assurance	<ul style="list-style-type: none"> • 10 CFR 830 Subpart A • DOE O 414.1A, Change 1 	<ul style="list-style-type: none"> • BJC/OR-43, <i>BJC Quality Assurance Program Plan for EMEF</i> (DOE approved) • BJC-PQ-1107, <i>Performance Document System</i> 	<div> Proforma: <ul style="list-style-type: none"> • Exhibit B, Special Condition – Quality Assurance • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit L, Mandatory Contractor Procedures </div> <div> Exhibit L Procedures Flowdown: <ul style="list-style-type: none"> • As defined in Exhibit L, Mandatory Contractor Procedures </div> <div> Subcontractor Submittals: <ul style="list-style-type: none"> • Project Specific Quality Assurance Plan • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk </div>	<ul style="list-style-type: none"> • Procedure contacts, reviewers, and approvers • Web-based procedures information system • SME Management Assessment of procedures process • Management MOP and Functional Manager Assessments • Subcontractor Oversight • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
12 – Procedures and Training Training Human Resources	<ul style="list-style-type: none"> • 10CFR830 Subpart A • DOE Order 5480.20A, <i>Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities</i> (per DOE approved Implementation Plan) • DOE O 414.1A, <i>Quality Assurance</i> • Prime Contract Clause 	<ul style="list-style-type: none"> • BJC/OR-43, Bechtel Jacobs Company LLC Quality Assurance Program Plan (DOE approved) • Policy 6, Training • BJC-HR-0702, Training Program • BJC-HR-0724, Training and Qualification Program for BJC Category 2 & 3 Nuclear Facilities • BJC-HR-0725, BJC Training Implementation Matrix for Category 2 and 3 Nuclear Facilities (DOE approved) • BJC/OR-1088, <i>Bechtel Jacobs Nuclear and Radiological Facilities Qualification Standard</i> • BJC-HR-0202, <i>Employment Process</i> • BJC-HR-0710, <i>Training Position Descriptions</i> • BJC-HR-0711, <i>Exceptions, Extensions, or Equivalencies</i> • BJC-HR-0712, <i>Training Records Management</i> • BJC-HR-0713, <i>Training Analysis</i> • BJC-HR-0714, <i>Design, Development, and Revisions to Training</i> • BJC-HR-0715, <i>Development, Control, and Administration of Examinations</i> • BJC-HR-0716, <i>Conduct of Training</i> • BJC-HR-0717, <i>Instructional Staff Training and Qualification Program</i> • BJC-HR-0718, <i>Administration of Training Remediation Process</i> • BJC-HR-0719, <i>Human Resources Training Management Assessments</i> • BJC-HR-0721, <i>Evaluation of Training</i> • BJC-HR-0750, <i>Required Reading Program</i> • BJC-PR-1401, <i>Appointment of Formation Teams</i> 	<p>Proforma:</p> <ul style="list-style-type: none"> • Exhibit B, Special Conditions – Quality Assurance • Exhibit B, Special Conditions - Training • Exhibit E SPG-000000-0023, Technical Specification for Training • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit G, Appendix G-4, Training/Medical Surveillance Certificate <hr/> <p>Exhibit L Procedures Flowdown: NA</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> • Project Specific Quality Assurance Plan • Exhibit G, Appendix G-3, ES&H Crosswalk • Appendix G-4, Training/Medical Surveillance Certificate <hr/> <p>Mandatory Training:</p> <ul style="list-style-type: none"> • Mandatory training modules as defined in Exhibit E SPG-000000-0023, Technical Specification for Training 	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Training subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. <p><u>For BJC:</u></p> <ul style="list-style-type: none"> • Training Manager Verification for completion of required training prior to qualification by line management for each candidate. • Completed qualifications are tracked in the training database. • The Position Assignment Forms (PAFs) capture training requirements. Training manager reviews compliance with these requirements on monthly basis. • Training Management Assessments Conducted routinely by Training Management and/or deployed staff • Training Requirements Associated with Task Specific Activities covered by AHA is verified prior to the start of work. <p><u>For Subcontractors:</u></p> <ul style="list-style-type: none"> • Training SME verification that each affected subcontractor has implemented the requirements of the Technical Specification, including all required training. • Completed qualifications are tracked in the training database • Training Management Assessments Conducted routinely • Training Requirements Associated with Task Specific Activities covered by AHA is verified per the work control technical specification prior to the start of work. • Training and Qualification status is assessed prior to Subcontract mobilization

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
13 – Human Factors Engineering Management Engineering & Environmental Services	<ul style="list-style-type: none"> Engineering Design and Construction Work Smart Standards 	<p>No BJC Program Description for Human Factors</p> <p>Note: BJC Work Smart Standards embody Human Factors with implementation in accordance with the BJC Engineering Program Description on a case by case basis, where and when BJC is involved in facility design activities. Human Factors considerations for existing facilities are addressed for facility modifications via the Engineering Program, and are supplemented by the Conduct of Operations, Maintenance, and Configuration Management Programs.</p>	<p>Proforma:</p> <ul style="list-style-type: none"> SPG-000000-A001, <i>Technical Specifications for Engineering Services</i> <hr/> <p>Exhibit L Procedures Flowdown:</p> <p>NA</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> Design submittals for 30, 60, 90% design reviews Final design submittals 	<ul style="list-style-type: none"> Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. Review and approval of facility designs including major modifications. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
14 – Quality Assurance Quality Assurance Performance/Quality Assurance	<ul style="list-style-type: none"> 10 CFR 830 Subpart A DOE O 414.1A, <i>Quality Assurance</i> DOE O 203.1, <i>Software Quality Assurance</i> 	<ul style="list-style-type: none"> BJC/OR-43, BJC Quality Assurance Program Plan for EMEF (DOE approved) BJC-GM-117, <i>Performance/Quality Assurance</i> Subcontractor Quality Assurance Prequalification Process 	<p>Proforma:</p> <ul style="list-style-type: none"> Exhibit B, Special Condition – Quality Assurance Exhibit B, Special Conditions – Training Exhibit E, SPG-000000-A0002, Technical Specification for Nuclear and Facility Safety Exhibit G, Appendix G-3, ES&H Crosswalk <hr/> <p>Exhibit L Procedures Flowdown:</p> <p>NA</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> Project Specific Quality Assurance Plan QA Monthly Issues / Corrective Action Summary Exhibit G, Appendix G-3, ES&H Crosswalk 	<ul style="list-style-type: none"> The subject matter expert completed a baseline assessment of the Quality Assurance subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. Quality Assurance Program Subcontractor Prequalification Project-deployed Quality Engineers (QE) MOP/FM Management Assessments Subcontractor Oversight QA Trending Subcontractor Performance Scorecards Supplier Audits Subcontractor Assessments Project/Subcontractor surveillances by SMEs Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
14 – Quality Assurance Document Control & Records Management Administrative Services	<ul style="list-style-type: none"> 10 CFR 830 Subpart A, <i>Criterion 4 Management / Documents and Records</i> 	<ul style="list-style-type: none"> BJC/OR-43, BJC Quality Assurance Program Plan for EMEF (DOE approved) BJC/OR-60, <i>Requirements for Bechtel Jacobs Company LLC Documents</i> BJC-OS-1001, <i>Records Management, Including Document Control</i> 	<div> Proforma: <ul style="list-style-type: none"> Exhibit A, General Conditions -, Environmental, Safety, and Health Requirements Exhibit B, Special Conditions – Quality Assurance Exhibit B, Special Conditions - Nondisclosure Exhibit G, Part I, Section 1.7.3, Routine Reporting Exhibit I, Subcontractor Submittal Requirements Summary </div> <div> Exhibit L Procedures Flowdown: <ul style="list-style-type: none"> BJC/OR-60, <i>Requirements for Bechtel Jacobs Company LLC Documents</i> </div> <div> Subcontractor Submittals: <ul style="list-style-type: none"> Project Specific Quality Assurance Plan Submittals as defined on Exhibit I for individual subcontracts. Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk </div>	<ul style="list-style-type: none"> The subject matter expert completed a baseline assessment of the Document Control & Records Mgt subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. Submittal tracking program provides on line, in depth tracking and statistical data to Management. Independent Assessments STR oversight of DCRM Subcontractor Subcontract close-out process Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
14 – Quality Assurance Issues Management Performance/Quality Assurance	<ul style="list-style-type: none"> 10 CFR 830 Subpart A DOE Order 414.1A DOE P 450.4, <i>Integrated Safety Management (Core Function 5- Feedback and Continuous Improvement</i> 	<ul style="list-style-type: none"> BJC/OR-43, BJC Quality Assurance Program Plan for EMEF (DOE approved) BJC-PQ-1210, <i>Issues Management Program</i> BJC-PQ-1230, <i>Root Cause Analysis</i> 	<div> Proforma: <ul style="list-style-type: none"> Exhibit B, Special Conditions – Quality Assurance Exhibit G, Appendix G-3, ES&H Crosswalk </div> <div> Exhibit L Procedures Flowdown: NA </div> <div> Subcontractor Submittals: <ul style="list-style-type: none"> Project Specific Quality Assurance Plan QA Monthly Issues / Corrective Action Summary Exhibit G, Appendix G-3, ES&H Crosswalk </div>	<ul style="list-style-type: none"> The subject matter expert completed a baseline assessment of the Issues Management subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. ICATS status reports ICATS trend analysis reports BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
15 – Emergency Preparedness Program Emergency Management Emergency Management	<ul style="list-style-type: none"> DOE O 151.1A, <i>Comprehensive Emergency Management System</i> ORO O 150, Attachment 1, <i>Comprehensive Emergency Management System Emergency Management S/RID</i> 	<ul style="list-style-type: none"> BJC-EP-3021, <i>Emergency Management Program Description</i> BJC-EP-3022, <i>Preparation/Maintenance of Emergency Management Hazards Surveys, Hazards Assessments, and Emergency Action Levels</i> BJC/OR-1106, <i>Emergency Management Hazards Assessment Application Guide</i> <p>Site Emergency Management Plans:</p> <ul style="list-style-type: none"> <u>Oak Ridge</u> – Plan for the ORR: Oak Ridge Reservation: U.S. DOE Oak Ridge Reservation Plan (ORR 150B) - addressing ETTP with BJC as lead site contractor and ORNL with BJC as supporting contractor; Y-12 National Security Complex, EMPO-500, with BJC as a support contractor. At ETTP, BJC is Prime Contractor and provides Plant Shift Superintendent responsibilities and the associated emergency management/response implementation procedures. <u>Portsmouth</u> - Plans for PORTS: BJC/PORTS-5/R2, Environmental Management and Enrichment Facilities Emergency Plan and USEC-02, Portsmouth Diffusion Plant Emergency Plan <u>Paducah</u> - Plans for PGDP: BJC/PAD-51/R3, DOE Paducah Site Environmental & Enrichment Facility Emergency Plan, and USEC-01, Application for United States Nuclear Regulatory Commission Certification, SAR Volume III, Emergency Plan 	<p>All employees/subcontractors work under the applicable site emergency management plans.</p> <p>Proforma:</p> <ul style="list-style-type: none"> Exhibit G, Appendix G-3, ES&H Crosswalk Exhibit G, Part II, Section 8.1.13, Emergency Response Training Exhibit G, Part II, Section 10, Emergency Response <hr/> <p>Exhibit L Procedures Flowdown: NA</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> Exhibit G, Appendix G-3, ES&H Crosswalk Subcontractor ES&H Plan (includes Emergency Plan) 	<ul style="list-style-type: none"> The subject matter expert completed a baseline assessment of the Emergency Preparedness subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. S/RID Flowdown Compliance Matrix Drills and Exercises Emergency Readiness Assurance Plan GET Building Emergency Plans Emergency Performance Metrics Event Critiques Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. Facility level emergency management hazard surveys, hazard assessments, and emergency action levels with BJC approval. LSS/PSS on distribution of BJC daily/weekly activities list. Site level implementing procedures or interface agreements as needed for support of site emergency management plans. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments].
16 – Provisions for D&D Engineering Management Engineering & Environmental Services	<ul style="list-style-type: none"> Engineering Design and Construction Work Smart Standards DOE O 430.2, <i>In House Energy Management</i> ORO 430 Chapter II, Attach 1, Change 1, <i>Life Cycle Facility Operations - In-House Energy Management</i> DOE O 430.1A Attach 2, <i>Life Cycle Asset Management</i> 	<p>No BJC Program Description for Provisions for D&D</p> <p>Note: BJC Work Smart Standards include requirements for addressing provisions for D&D with implementation in accordance with the BJC Engineering Program Description on a case by case basis, where and when BJC is involved in facility design activities.</p>	<p>Proforma:</p> <ul style="list-style-type: none"> SPG-000000-A001, Technical Specifications for Engineering Services <hr/> <p>Exhibit L Procedures Flowdown: NA</p> <hr/> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> Design Submittals for 30, 60, and 90% Design Final Design Submittals 	<ul style="list-style-type: none"> Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. Engineering Review ALARA design reviews. BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
17 – Management, Organization, and Institutional Safety Integrated Safety Management Closure Project Evaluation Board / ISMS Improvements	<ul style="list-style-type: none"> • DOE P 450.4, Safety Management System Policy • DOE P 450.6, Secretarial Policy Statement on Environment, Safety, and Health • DOE-STD-1120-98, Integration of ES&H into Facility Disposition Activities • DEAR Clause 970.520402 (Contract Clause I-89), Integration of ES&H Into Work Planning and Execution 	<ul style="list-style-type: none"> • BJC-GM-1400, ISMS Description (submitted for approval) • BJC-FS-1010, <i>Subcontract Technical Representative (STR) Program Plan</i> • BJC-FS-1011, <i>Subcontract Technical Representative (STR) Requirements for Subcontract Formation</i> • BJC-FS-1012, <i>Subcontract Technical representative (STR) Requirements for Subcontract Execution</i> • BJC-GM-213, <i>Closure Project Evaluation Board/ISMS Improvements Charter</i> • BJC-PQ-1170, <i>Control of Subject Matter Area Designations and Subject Matter Expert Assignments</i> • BJC-PR-1002, <i>Processing Proforma Documents</i> • BJC-PR-1407, <i>Formation, Processing, and Control of RFPs</i> 	<p>All subcontractor work is in accordance with the BJC ISM System Description.</p> <p>Proforma:</p> <ul style="list-style-type: none"> • Exhibit A, General Condition – Government Clauses • Exhibit A, General Condition – Government Clauses Incorporated by Reference • Exhibit E, SPG000000-A006, Technical Specification for Subcontractor Work Control Requirements • Exhibit G, Part 1, Section 1.3, Integrated Safety Management System • Exhibit G, Part 1, Section 1.4, Employee Empowerment • Exhibit G, Part 1, Section 1.5, Employee Involvement • Exhibit G, Part 1, Section 1.6, Subcontractor's ES&H Plan • Exhibit G, Appendix G-3, ES&H Crosswalk <p>Exhibit L Procedures Flowdown: NA</p> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> • Exhibit G, Appendix G-1, ISMS Matrix • Exhibit G, Appendix G-3, ES&H Crosswalk • ISMS Commitment Letter • Subcontractor ES&H Plan 	<ul style="list-style-type: none"> • BJC-GM-213, <i>Closure Project Evaluation Board/ISMS Improvements</i> [see Assessments below] • Feedback and Improvement elements as documented in BJC-GM-1400, <i>ISMS Description</i>: 1) Management Assessments, 2) Independent Assessments, 3) Closure Project Evaluation Board, and 4) ISMS Annual Assessment [see Assessments below] • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • Independent External Evaluation of BJC ISMS 2002 • Comprehensive BJC ISMS Assessments and Corrective Actions 2002 • ISMS Annual Report to DOE including OFIs • ISMS monthly ESH metrics including SIMS Safe Performance Metric---Safe Work Annunciator Panel
17 – Management, Organization, and Institutional Safety Occupational Safety Environment, Safety & Health	<ul style="list-style-type: none"> • 29CFR1910 • 29CFR1926 • DOE O 440.1A, <i>Worker Protection Mgt for DOE Federal and Contractor Employees</i> • DOE O 225.1A, <i>Accident Investigations</i> • DOE O 231.1, Change 2, <i>ES&H Reporting</i> • ANSI B30.2, <i>Over Head and Gantry Cranes</i> • ANSI B30.5, <i>Mobile and Locomotive Cranes</i> • ANSI B30.10, <i>Hooks</i> • ANSI B30.11, <i>Monorails & Underhung Cranes</i> • ANSI B30.16, <i>Overhead Hoists</i> • ANSI B30.20, <i>Below The Hook Lifting Devices</i> • ANSI B30.21, <i>Manually-Operated Hoists</i> 	<ul style="list-style-type: none"> • BJC-GM-1400, ISMS Description (submitted for DOE approval) • BJC-GM-112, <i>Environment, Safety and Health</i> • BJC Policy 401, <i>Managers of Projects</i> • BJC-EH-2002, <i>Hazardous Energy Control (Lockout/Tagout)</i> • BJC-EH-2007, <i>Welding/Burning/Hotwork</i> • BJC-EH-2010, <i>Hazard Assessment</i> • BJC-EH-2011, <i>Safety Meetings</i> • BJC-EH-2014, <i>Compressed Gases</i> • BJC-EH-2015, <i>Safety Concerns (I Care/We Care)</i> • BJC-EH-5615, <i>ES&H Staff Roles & Responsibilities/Training Position Description</i> • BJC-FS-1001, <i>Work Control Requirements</i> • BJC-FS-1004, <i>Excavation/Penetration Permit</i> • BJC-FS-1008, <i>Hoisting and Rigging</i> • BJC-GM-530, <i>Implementation of Turbo Activity Hazard Assessment</i> 	<p>Proforma:</p> <ul style="list-style-type: none"> • Exhibit A, General Conditions - Laws, Regulations, and DOE Directives • Exhibit G, Part I, ES&H Requirements – General Provisions • Exhibit G, Part II, ES&H Requirements – Special Requirements • Exhibit G, Appendix G-1, ISMS Matrix • Exhibit G, Appendix G-3, ES&H Crosswalk <p>Exhibit L Procedures Flowdown:</p> <ul style="list-style-type: none"> • BJC-EH-2002, <i>Hazardous Energy Control (Lockout/Tagout)</i> • BJC-EH-2007, <i>Welding/Burning/Hotwork</i> • BJC-FS-1004, <i>Excavation/Penetration Permit</i> • BJC-FS-1008, <i>Hoisting and Rigging</i> 	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Occupational Safety subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Zero Accident Council • Routine Subcontractor Technical Representative (STR) / Safety Advocate (SA) subcontractor surveillances. • Dedicated SAs for each subcontract • Independent SME Management Assessments • Annual Review of Safety Procedures. • Focused Assessment/Investigations • ES&H Subcontractor Prequalification Process • Monthly Safety Performance Report • SME review of I/CATS, ORPS, and Lessons Learned

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
	<ul style="list-style-type: none"> • ANSI B56.6, Rough Terrain Forklift Trucks • Environmental Management and Enrichment Facilities Operation Work Smart Standards (WSS) • UF₆ Cylinder Program WSS • Engineering Design & Construction WSS 	<ul style="list-style-type: none"> • BJC-EH-5614, <i>Safety Advocate Program</i> • SH-A-2000, <i>General Safety Rules</i> • SH-A-2001, <i>Accident/Incident Reporting and Recordkeeping</i> • BJC-EH-2005, <i>Personal Protective Equipment</i> • SH-A-2009, <i>Electrical Safety</i> • BJC-EH-2018, <i>Suspension of Work (Safety Related)</i> • SH-B-1012, <i>ES&H Management Assessment Program</i> 	Subcontractor Submittals: <ul style="list-style-type: none"> • Exhibit G, Appendix G-1, ISMS Matrix • Exhibit G, Appendix G-2, Subcontractor Monthly Injury / Illness Report • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit G, Appendix G-5, Activity Hazard Assessment • Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk • Subcontractor ES&H Plan • Subcontractor Zero Accident Performance Commitment Letter • ISMS Commitment Letter • ES&H Representative Qualifications • Incident Reports • Accident/Incident Investigation Reports • Fall Protection Plan • Request for Excavation/Penetration Permit • Traffic Control Plan 	<ul style="list-style-type: none"> • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]
17 – Management, Organization, and Institutional Safety Assessments Performance/Quality Assurance	<ul style="list-style-type: none"> • 10CFR830 Subpart A • DOE O 414.1A, Chg. 1, <i>Quality Assurance</i> • DOE P 450.4, <i>Safety Management System Policy</i> • DOE P 450.5, <i>Line Environment, Safety and Health Oversight</i> 	<ul style="list-style-type: none"> • BJC/OR-43, BJC Quality Assurance Program Plan for EMEF (DOE approved) • BJC-GM-1400, ISMS Description (submitted for DOE approval) • BJC-GM-213, <i>Closure Projects Evaluation Board / ISMS Improvements</i> • BJC-GM-1001, <i>Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description</i> • BJC-PQ-1401, <i>Independent Assessments</i> • BJC-PQ-1420, <i>Management Assessments</i> • BJC-PQ-1415, <i>Performance Monitoring</i> • BJC-PQ-1502, <i>Qualification of Independent Assessment Personnel</i> • BJC-PQ-1650, <i>Graded Approach Application</i> • BJC-NS-1017, <i>Safety Basis Implementation Validation Reviews</i> 	Proforma: <ul style="list-style-type: none"> • Exhibit B, Quality Assurance Special Condition • Exhibit G, Appendix G-3, ES&H Crosswalk <hr/> Exhibit L Procedures Flowdown: NA	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Assessments subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Annual ISMS Assessment is conducted in accordance with BJC-GM-1400, <i>ISMS Description</i>. • Annual ES&H Summary Assessment Report • Annual Assessment Plan • Annual Independent Assessment Report • Annual Management Assessment Reports (for each project) • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement.

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
17 – Management, Organization, and Institutional Safety Readiness Assessment Performance/Quality Assurance	<ul style="list-style-type: none"> • DOE O 425.1B, <i>Startup and Restart of Nuclear Facilities</i> 	<ul style="list-style-type: none"> • BJC-PQ-1510, <i>Readiness Reviews for Nuclear Category 2 and 3</i> 	Proforma: <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit E, Technical Specification for Readiness Review Interface <hr/> Exhibit L Procedures Flowdown: NA	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Readiness Assessment subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Startup Notification Reports • The MOP approves Readiness Assessment and Operational Readiness Review Plans. • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Assessments]
			Subcontractor Submittals: <ul style="list-style-type: none"> • Exhibit G, Appendix G-3, ES&H Crosswalk 	
17 – Management, Organization, and Institutional Safety Nuclear Safety Documentation, Configuration Management, and USQD Process Nuclear Facility Safety	<ul style="list-style-type: none"> • 10CFR830 Subpart B • WSS ACR 12 – Integrated Safety Management - The Contractor will use a tailored approach in the establishment of a management system that considers DOE-STD-1073-93, Guide for Operational Configuration Management, as an Implementation Guide. • WSS ACR 16 - Facility Safety Configuration Management - For activities subject to an authorization basis, configuration control will be maintained to ensure that activities remain within the approved authorization basis. If outside the authorization basis, the change shall be approved at a level consistent with the original authorization basis approval. • Prime Contract, Section H-35(d)(5) & (6) • DOE O 420.1A, <i>Facility Safety</i> • DOE O 420.1A, <i>Facility Safety</i>, Section 4.5, Systems Engineering Program (per BJC submitted Implementation Plan) 	<ul style="list-style-type: none"> • BJC-GM-013, <i>Nuclear Safety Assurance</i> • BJC-GM-211, <i>Safety Basis Review Board</i> • BJC-NS-1011, <i>Control of Safety Basis Documents</i> • BJC-NS-1016, <i>Configuration Management Program for Nuclear and Non-Nuclear Facilities</i> • BJC-NS-1001, <i>Unreviewed Safety Question Determinations for Nuclear Category 2 & 3 Facilities</i> (DOE approved) • BJC/OR-1281, <i>System Engineer Program Description for Bechtel Jacobs Company</i> • BJC-NS-1002, <i>Safety Documentation for Hazard Category 2 and 3 Nuclear Facilities</i> • BJC-GM-515, <i>Facility Management</i> 	Proforma: <ul style="list-style-type: none"> • Exhibit B, Special Conditions – Quality Assurance • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit E, SPG-000000-A002, Technical Specification for Nuclear Facility Safety • Exhibit E, SPG-000000-FS01, Technical Specification for Nuclear Facility Maintenance <hr/> Exhibit L Procedures Flowdown: <ul style="list-style-type: none"> • BJC-NS-1001, <i>Unreviewed Safety Question Determinations for Nuclear Category 2 & 3 Facilities</i> • BJC-NS-1002, <i>Safety Documentation for Hazard Category 2 and 3 Nuclear Facilities</i> <hr/> Subcontractor Submittals: <ul style="list-style-type: none"> • Project Specific Quality Assurance Plan • Exhibit G, Appendix G-3, ES&H Crosswalk • Exhibit L, Appendix L-2, Mandatory Contractor Procedures Crosswalk • Subcontractor submittal of operating procedures. 	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Configuration Management and USQD Process subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Safety Basis Review Board • Qualified Independent Technical Reviewers • DSA Compliance Matrix • DSA Implementation Validation Reviews • DOE approvals provides by SERs • List of Active Safety Systems (LASS) • Designated, qualified System Engineers • System Engineer operability evaluations • Configured Items List maintained by projects • Configuration Management Board for each project with designated CM Manager • Qualification of USQD preparers and approvers • SME USQD verification reviews • PISA / USQ Weekly Status Report • USQD training for managers • SBRB of PISAs / USQs • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments]

DOE-STD-3009 Safety Management Program (SMP) Matrix

3009 SMP / BJC SMA / Functional Org.	Key Upper Tier Requirements	BJC Program Documentation	Proforma / Mandatory Procedures / Submittals	SMP Assurance / Programmatic Assessment Elements
<p>17 – Management, Organization, and Institutional Safety</p> <p>Occurrence Reporting and Lessons Learned</p> <p>Performance/Quality Assurance</p>	<ul style="list-style-type: none"> • 10 CFR 830 Subpart A • DOE 0 232.1A, <i>Occurrence Reporting and Processing of Operations Information</i> • Doe M 232.1-1A, <i>Occurrence Reporting and Processing of Operations Information</i> • DOE Order 414.1A, <i>Quality Assurance</i> • DOE P 450.4, <i>Integrated Safety Management</i> 	<ul style="list-style-type: none"> • BJC-PQ-1220, <i>Occurrence Notification and Reporting</i> • BJC-PQ-1240, <i>Lessons Learned Program</i> • BJC-GM-1400, <i>BJC Company Integrated Safety Management System Description</i> • BJC-GM-117, <i>Performance/Quality Assurance</i> • BJC-PQ-1210, <i>Issues Management Program</i> • BJC-PQ-1220, <i>Occurrence Notification and Reporting</i> • BJC-PQ- 1221, <i>Occurrence Notification and Reporting Guidance</i> • BJC-PQ-1460, <i>Event Investigation & Critiques</i> • BJC-PQ-1230, <i>Root Cause Analysis</i> • BJC-PQ-1210, <i>Issues Management Program</i> • DOE-STD-7501-95, <i>DOE Standard on Development of DOE Lessons Learned Program</i> 	<p>Occurrence Reporting is a BJC implemented program. Subcontractors are required to notify the BJC STR of incidents.</p> <p>Lessons Learned process is a BJC implemented program, including any lessons involving BJC Subcontractor performance and communication of Lessons Learned to BJC subcontractors.</p> <p>Proforma:</p> <ul style="list-style-type: none"> • Exhibit B Special Conditions – QA • SPG-000000-A06, <i>Technical Specification for Work Control Requirements</i> • Exhibit G, Part I, Section 1.6, Subcontractor's ES&H Plan • Exhibit G, Part I, Section 1.7.1, Incident Reporting <p>Exhibit L Procedures Flowdown: NA</p> <p>Subcontractor Submittals:</p> <ul style="list-style-type: none"> • Subcontractor ES&H Plan • Subcontractor must immediately notify BJC of an event or condition that adversely affects, or may affect, DOE, contractor, or subcontractor personnel, the public, property, the environment, or the DOE mission. • Project Specific QAP 	<ul style="list-style-type: none"> • The subject matter expert completed a baseline assessment of the Occurrence Reporting and Lessons Learned subject matter area. This assessment verified the adequacy of contractual requirements and established programmatic flowdown. • Subcontractor mobilization evaluation, readiness assessments, and notification to proceed determinations are completed prior to start of work. These reviews assure the adequacy of program development and readiness to implement. • SME conducts management assessments annually. • Monthly Analysis and Reports Summary • BJC independent assessments and Closure Project Evaluation Board (CPEB) evaluations [see Chapter 17 description of Assessments] • BJC ORPS web page • BJC Lessons Learned web page